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# JOURNAL
*of the*
# American Veterinary Medical Association

FORMERLY
AMERICAN VETERINARY REVIEW
(Original Official Organ U. S. Vet. Med. Ass'n.)
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## CONTENTS



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J. R. MOHLER, Editor, Washington, D. C.





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## IMMUNIZATION AGAINST FOOT-AND-MOUTH DISEASE

RECENTLY there have appeared in the agricultural press articles announcing the discovery in France of a serum for the immunization of cattle against foot-and-mouth disease. These articles create the impression that a new discovery has been made and that in the future foot-and-mouth disease can be prevented as successfully and economically as hog cholera, rabies, diphtheria and typhoid fever, which is not true.

To Prof. Loeffler we owe most of our present knowledge relative to the effects of serum immunization for foot-and-mouth disease. When he was in charge of the laboratories of the German Government he developed a serum that was in a measure successful. The work in France by Vallée, Nocard, Leclainche and Carré is based on the previous investigations of Loeffler. In a recent communication Prof. Vallée says: "At present we are studying the immunizing value of the blood of recovered animals; but material difficulties are always encountered in the application on a large scale."

The experiments of Prof. Loeffler proved that the serum does not protect animals in small doses (20 to 30 cubic centimeters), but large repeated doses afforded a protection to the animals for a short time and might be employed to advantage in eradication

work when control of the disease is attempted by quarantine measures and also to immunize cattle for transportation and exhibition purposes.

In the partly successful German experiments, animals over 3 months old received four injections of serum at intervals of 10 to 14 days. The first injection consisted of 200 c.c. and the subsequent injections of 60, 30 and 30 c.c., respectively. Considering that the preparation of a liter (about a quart) of serum cost $25.00 in Germany before the war when the experiments were made, it cost over $8.00 to protect every animal over 3 months old even when the hogs used for the preparation of the virus were passed for food. If the hogs were not passed for food the cost of the serum would be at least doubled. It should also be considered that in these experiments 6 to 8 per cent of failures occurred. A single failure in the United States to protect might prove to be the source of a new outbreak.

The impracticability of the serum immunization is further augmented by the difficulty of preparing the serum; and particularly on account of this disadvantage the method could not be utilized satisfactorily in countries where the disease is not generally prevalent or where it occurs only as a result of its periodical introduction.

The preparation of the serum requires propagation of the foot-and-mouth disease virus, and such a procedure in this country would be a constant menace to the livestock industry, even with the exercise of the greatest precaution and care. This was demonstrated in Germany when the Government was called upon to pay damages for losses from outbreaks resulting from the escape of the virus from Prof. Loeffler's laboratories.

Protective serum can not be kept for a period of years, as it deteriorates; therefore the preparation of such serum could only be considered at the time of the appearance of an outbreak. In view of the great quantity required for immunization of a single animal, it is almost incomprehensible how a sufficient amount could be produced to protect the susceptible animals in one of our large livestock counties. It should be borne in mind that the fluid from vesicles of hogs affected with the disease is used for the hyperimmunization of cattle.

One or more injections of 100 c.c. of such vesicular fluid are made into each of the cattle which produce the protective serum. The average quantity of vesicular fluid obtained from a sick hog is about 5 c.c.; thus for each injection of 100 c.c. in hyperimmunizing cattle 20 hogs affected with foot-and-mouth disease would be required and many of the hogs inoculated do not develop sufficiently large vesicles to be of practical use. The difficulties involved at present in producing serum in large quantities suggests the impracticability of serum immunization in the United States against this disease should another outbreak occur. Furthermore the immunity conferred by the serum usually lasts only from 2 to 6 weeks.

It is hoped that Prof. Vallée will be successful in developing an immunizing treatment that will prove effective and at the same time practical from the standpoint of economy, but to date no such cheering official report has reached this country.

In view of our present knowledge of the disease and the past results of immunization we agree with the editor of the *National Stockman and Farmer* who states in a recent issue that "Such a discovery is of the greatest importance to Continental Europe, where foot-and-mouth disease causes untold loss every year. Our policy of keeping out the disease, and eradicating it if it accidentally gets in, is correct. Millions spent occasionally for eradication will be cheaper than millions spent every year for treatment."

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## THE EFFICACY OF VACCINE THERAPY

THE value of vaccine therapy was demonstrated in a striking way during the recent war. Antityphoid vaccination was employed with wonderful effectiveness in the Allied armies. The *Journal of the American Medical Association* (vol. 76, p. 1576), summing up a large series of statistics from numerous armies, finds that the frequency of typhoid fever in vaccinated and unvaccinated troops is generally in about the ratio of 1 to 10. The specificity of the vaccination was also established, as paratyphoid was relatively high until triple vaccines were employed.

In previous wars of the last half century the typhoid mortality had varied from 11.2 to 21 per thousand troops. In the

World War the rate in the French Army in 1917 was only 0.4 per *hundred thousand.* Among 211,000 French troops in Algeria only 154 cases of typhoid occurred, and 108 of these were in men who had escaped vaccination through fraud. In the Japanese Army the morbidity of the vaccinated soldiers was but one-seventh that of the unvaccinated, and the mortality but one-eighth. In the American Army, which was practically 100 per cent vaccinated, there were but 1,056 cases of typhoid with 156 deaths among 4,000,000 troops from April, 1917, to November, 1919. This was 1 death for each 25,641 soldiers, while the death rate among the civilian population was 1 in 7,143. The British experience was also highly favorable.

"It is strange," says the *Journal,* "that of all nations engaged in the World War, only Germany expresses doubt as to the efficiency of antityphoid vaccination." The German skepticism is attributed to the inefficiency of the vaccine used and faulty methods.

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## VETERINARY CHIROPRACTIC

And now the lower animals are to be "adjusted"! The house organ of a brand of chiropractic dispensed from Davenport, Iowa, prints letters from some of its "graduates" describing wonderful results attained in the "chiropractic treatment" of sick animals. One enthusiastic Georgia chiropractor relates that when he "was adjusting Henry Vinson's son for an incoordination causing pneumonia" that "Mr. Vinson says, 'Doc, I have a mule that is down in the back and can't get up and wish you would come out and see if you can do something for him.'" The versatile chiropractor looked over his new patient and "adjusted the mule between the hip bones." The mule recovered—presumably slowly enough to allow the adjuster to escape. The same practitioner also reports that he "was called to attend Mr. Ben Vandalsem's Scotch Collie who was dragging his hind legs, and after adjusting the dog he improved and got quite normal." A Texas chiropractor records the interesting case of a "cow down, all swelled up, as if she would burst." Diagnosis: "A poisoned condition." Treatment: "I adjust sixth and eighth dorsals and K. P. In

two minutes cow was up vomiting. I came back by in one hour, cow seemingly in normal condition." Now, putting the "dorsals and K. P." of a cow in position and adjusting a mule "between the hip bones" may get chiropractors into serious trouble. It is one thing to fool with the health of human beings and an entirely different thing to trifle with the health of livestock. The "patent medicine" interests of the country have been powerful enough to keep off the statute books any law that would protect the public by giving it information regarding the composition of nostrums sold as home remedies. But there are some States which forbid the sale of any livestock remedy that does not bear on the label the names of its active ingredients. Hence it may easily come to pass that if the chiropractors attempt to treat cows and pigs they may find themselves in hot water. That men, ignorant of the body and its processes, should treat the ailments of men, women and children is apparently a small thing; human life is the only thing involved. But that ignoramuses should trifle with the health of a horse or a hog is an outrage; that is property. If chiropractors are wise they will confine their malpractice to humans; it is safer.—*From Jour. Amer. Med. Assn., Sept. 17, 1921, p. 944.*

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## SHORTAGE OF VETERINARY STUDENTS

The *National Stockman and Farmer* for September 17 says, in an editorial: "The College of Agriculture of the Ohio State Univerity reports a decrease in the number of new students taking agricultural courses. Ohio is not alone in this respect this year. Though we have not observed other States saying much about it probably a majority of them could report the same thing. * * * There is one profession, allied to agriculture, which should be considered by the right kind of young men because of a prospective shortage in its ranks in the future—veterinary medicine. This year only 923 students of veterinary medicine appeared in all the colleges, and only 277 graduated. In 1916 there were 2,992 students, and in 1918 there were 867 graduates. These figures * * * foreshadow a shortage of competent veterinarians and we have none too many of that kind now."

# THE SURGICAL TREATMENT OF LARYNGOPLEGIA OF THE HORSE[1]

*By* JOHN W. ADAMS

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LARYNGEAL STRIDOR, "whistling," "high breathing," "roaring," etc., in the horse is in from 96 to 99 per cent of all cases due to a partial or complete paralysis of the left recurrent nerve. This is the motor nerve of the dilator muscles of the larynx. These dilator muscles which abduct the arytenoid cartilage and open the glottis to its full extent at the beginning of an inspiration are two in number for each side of the larynx. The posterior cricoarytenoideus abducts the arytenoid and elevates its anterior end. The lateral cricoarytenoideus abducts the anterior end of the arytenoid cartilage and tilts the upper border of the arytenoid strongly outward. As a rule, it is these two muscles of the left side that are paretic or paralyzed, and finally become atrophic, pale in color, and undergo fatty metamorphosis. As a result of the paralysis the left side of the larynx does not dilate during inspiration. The column of inspired air forces the passive arytenoid and the relaxed vocal cord downward and inward toward the middle of the glottis, where they obstruct inspiration, cause dyspnea of varying degree, and produce a sound whose pitch depends upon the tension and rate of vibration of the vocal cord and arytenoid cartilage.

Paralysis of the recurrent laryngeal nerve occurs in all breeds of the horse and in the ass, mule, ox and dog. It appears most frequently in the English Thoroughbred and halfbred, but is by no means infrequent in the draft breeds and in the grades.

The etiology of recurrent paralysis is not fully known, but two rather distinct etiologic groups are recognized: Primary laryngoplegia, and secondary or consecutive laryngoplegia.

Primary laryngoplegia arises usually without previous infectious disease or other attributable cause, and most frequently between the ages of three and six. Hereditary predisposition

[1] Presented at the fifty-eighth annual meeting of the American Veterinary Medical Association, Denver, Colo., September 5-9, 1921.

may be strong in certain horses. Some families of Thoroughbreds show numerous roarers; other families few or none. It is possible that the early and severe training of the horse used for speed and the high development of his blood vascular system are causative factors. The recurrent nerve may be damaged by the stronger pulse wave of the common aorta or of the carotid at points where the nerve is in contact with these arteries. This, however, is a pure assumption, because the most careful histologic examination of the nerve in primary laryngoplegia has not shown the least pathologic alteration either at points of contact of nerve and artery or distal to these points. The only nerve lesion noted has been fatty degeneration of the nerve fibers of the terminal two or three inches, at the stage when extreme atrophy and degeneration of the laryngeal muscles were in evidence. In rare instances pathologic changes have been demonstrated in the "nucleus ambiguus" or origin of the recurrent nerve in the medulla oblongata.

Secondary laryngoplegia may follow such an infectious disease as influenza or such a contagion as dourine. Acute lead poisoning and the ingestion of a few plants occasionally give rise to roaring. In the pectoral form of influenza it seems probable that there may be a toxic neuritis of the nerve elements of the left recurrent laryngeal nerve, dependent in some way upon the close association of the left recurrent in its mediastinal course with a chain of lymph glands. In dourine roaring has followed peripheral neuritis of the recurrent nerve, with small round-cell infiltration. Colt distemper (suppurative lymphadenitis) and angina (acute laryngopharyngitis) have infrequently been followed by laryngoplegia. In acute plumbism there may be primary degeneration of peripheral motor nerve fibers and secondary atrophy of muscles animated by these nerves. Among plants whose ingestion may be followed by roaring are chick pea, monkshood and lucerne or alfalfa (*Medicago sativa*).

Vermeulen in an article entitled "Das Kehlkopfpheifen beim Pferde," Utrecht, 1914, advanced the opinion that roaring is not a symptom of an isolated and localized paralysis of the recurrent laryngeal nerve, but is rather to be regarded as evidence of a systemic disease involving several motor nerve centers, as the recurrent, oculomotor, trigeminal, abducens, facial. Vermeulen has repeatedly observed in roarers facial paralysis,

ptosis, strabismus, nystagmus, etc. He has also found in two roarers degeneration of the nucleus ambiguus of the medulla oblongata.

The firm, permanent adhesion of the lateral face of the arytenoid cartilage and vocal cord to the inner face of the thyroid in the position of forced inspiration may follow the removal of the mucosa of the lateral ventricle, provided there be paresis or paralysis of the dilator muscles of the arytenoid. This was first announced in 1845 by Karl Guenther, professor in the Hanover Veterinary School. He performed the operation, but did not learn its full value and did not recommend it to his students.

In 1906 Prof. W. L. Williams resuscitated the operation and abundantly demonstrated that stripping the laryngeal ventricle is the most efficient means of dealing with roaring of nerve origin. In 1910 Frederic Hobday gave the operation wide publicity throughout England and Continental Europe. Since then no more efficient operation has appeared, but numerous modifications of the original technic have been introduced by various operators.

I have presumed to present briefly the surgical procedure that I am at present following, in the hope that a general discussion may settle mooted questions.

About three-fourths of my cases have been hunters from purebred to halfbred, with Thoroughbred runners, trotters and pacers, saddlers, ponies and work horses in diminishing numbers.

## EXAMINATION

The patient should be winded. Be satisfied that the objectionable sound, whether whistle, hiss or low-pitched snore, occurs during inspiration and does not originate in a nasal passage. The expired air from the two nostrils should strike the hand or cheek with equal force. Ascertain the width and rigidity of the larynx by compressing it laterally between the fingers of the two hands. In young animals it is elastic and easily compressed; in older animals somewhat stiffer. An enlarged, hard, unyielding larynx indicates chondritis and contraindicates the laryngeal operation. I have operated upon twenty-odd windy horses showing such laryngeal chondritis, without noticeable improvement in a single case.

### PREPARATION OF THE PATIENT

A warm mash twelve to eighteen hours before the operation, with no food or water intervening, is sufficient preparation. I cast and induce general anesthesia in all cases. I cast because it enables me to restrain the patient safely and completely and to carry out placidly the technic I undertake. I know before I begin just how I am going to finish. A small proportion of all horses, but a large proportion of the hot-blooded, will not stand sufficiently quiet even when fastened in the stocks for a surgeon to exercise proper care in an intra-laryngeal operation. Acrobatic surgery upon a valuable horse, in the presence of the owner and his friends, or his employees, makes a bad impression, does not increase your clientele, nor redound to the welfare of the patient. The first principle of surgery is to have your patient under complete control, and no horse on his feet and conscious is under control.

The horse is led out into the open where there is good, smooth sod, free of stones, and the twitch is adjusted. The English hopples are adjusted, the unbalancing rope attached, the feet assembled, and at the command the animal is thrown on the flat of the shoulder, the attendant holding the tail, delaying the descent of the hind quarters. A grain sack tightly stuffed with straw and flattened in its middle is placed crossways under the neck to elevate the poll and protect the under eye. Chloroform is given to produce unconsciousness and insure absence of head movements, rather than for its anesthetic effect.

When the stage of surgical anesthesia appears, turn the patient into the dorsal position, which is maintained by two men on either side, while a fifth at the muzzle keeps the head extended. From the time the horse is rolled upon his back till the operation has been completed no further chloroform is needed.

### INSTRUMENTS

Razor, convex scalpel, spring retractor, two or three hemostatic forceps, curved scissors, sharp-pointed concave bistoury, dressing forceps, tracheal tube, tape, cotton or gauze, tape suture needle.

### THE OPERATION

The operation consists of an invading incision from the median prominence of the thyroid to the first tracheal ring, as near as

may be on the median line; the dilation of the wound, circumcision of the left ventricular sac, teasing out of its mucosa, and the introduction and securing of a tracheal tube between the cricoid and the first tracheal ring.

When the laryngeal incision has been made, compress the spring retractor and adjust the terminal hooks just anterior to the cut ends of the cricoid with its angle directed backward and resting on the skin over the middle line of the neck. Pull the skin up through the ring at the angle of the retractor and transfix it with the attached pin. The retractor will now maintain its position automatically. No artificial illumination is required when operating out of doors, even on cloudy days, but under cover or at dusk an ordinary spot light is sufficient.

The operator kneels on the left side of the neck and opposite him is an attendant holding the tray of instruments. Inspection reveals the left arytenoid motionless or moving slightly. I have never seen a right-sided paresis or paralysis with a sound left side. Under deep chloroform anesthesia neither arytenoid may move, but the left if paretic is usually slightly displaced downward and toward the lumen of the glottis. Its angle at the point of attachment of the vocal cord projects decidedly beyond the general surface of the laryngeal wall.

The first step is to incise the mucosa entirely around the top of the ventricle. This is easy by the following method:

Introduce to the bottom of the ventricle the end of a round stick about 10 inches long and of the diameter of a fountain pen, which is bent at its middle at an angle of about 45 degrees, and, grasping the outer end of this bent stick or curved instrument, pry the arytenoid cartilage and attached vocal cord toward the center of the lumen of the larynx. The bend in the lever places the hand holding it to one side of the opening and permits an unobstructed view of the vocal cord and ventricle, which are now tense and in a position to be incised. Introduce the point of the concave bistoury through the mucosa of the vocal cord at a point about one inch from the thyroid angle and upon the exact edge between the medial and lateral sides of the vocal cord, and make a superficial slit down to but not into the arytenoid cartilage. Next introduce the point of the bistoury through the middle of the lateral border of the ventricle and make a curving incision which will join the first at the arytenoid cartilage. Finally, introduce the bistoury at the beginning of the

first incision and pass it just beneath the mucosa to the beginning of the second incision, where the point should emerge. The mucosa covering the blade is then cut through by a careful drawing stroke and the circumcision has been completed.

*Stripping the ventricle.*—Withdraw the pry. Grasp the mucosa of the circumscribed ventricle at the middle of the vocal cord, using the side of the jaws of an ordinary pair of hemostatic forceps. Lift this edge slightly and gently, for it is often quite thin and is easily torn, and tease it away from its attachment to the muscle of the vocal cord. As soon as a quarter of an inch of this edge has been freed, grasp it with a second pair of forceps snug against the muscle. This procedure is repeated till the mucosa below the muscle has been brought to the surface, when the grasping hemostat may be rotated on its long axis and the mucous membrane rolled about its end. The loosening of the remainder of the sac is best accomplished by introducing the index finger of the left hand into the space between the vocal cord and forceps and gently teasing away the loose submucosa and lifting the sac. Use care not to scratch the perichondrium of the arytenoid, not to cut through or weaken the vocal cord, and not to wound the arytenoid cartilage.

*Ablation by Eberlein's method.*—Introduce the index finger of the left hand into the left ventricle and by straightening this finger press the arytenoid and vocal cord toward the midline of the larynx. In the latter position the vocal cord will be in full view and will be tense. From a point one-half inch from the arytenoid and exactly on the upper edge of the vocal cord make an incision through the mucous membrane to the arytenoid, thence for one-half an inch upward along the anterior border of the arytenoid parallel with this border and quite close to it. The length of this angular incision should not exceed an inch. Introduce the point of the index finger into this incision and carefully bore down between the sac and the outer face of the arytenoid and gradually loosen the sac from its surroundings and push its base upward through its mouth. With a pair of forceps seize the bottom of the sac, which now covers the end of the finger like a thimble, and, holding it tense, cut it away with scissors or probe-pointed bistoury.

The left sac has now been removed, and attention is turned to the right side. By this time the patient has so far recovered from the effects of the anesthetic that the right arytenoid is in mo-

tion. If on inspiration this right arytenoid does not bury itself in the wall of the larynx till its medial face is approximately on a level with the surface of the cricoid below it, I regard its abductive power as suspicious, and am inclined to remove the right ventricle. I confess, however, that for several years I have been removing the right ventricle in but approximately 10 per cent of my cases, for this is about the proportion in which the normal amplitude of right arytenoidean swing has seemed to me to be deficient. For some years I removed both sacs in all cases, and the percentage of improvement and recovery was distinctly lower than it has been since I began to remove the right sac only when the arytenoid on this side *seemed* to have deficient movement. The double-sided operation doubles the danger of chondritis and thickening and anchylosis of the arytenoids. When the abductors of the right arytenoid are not paretic, even the removal of the corresponding ventricle does not fix this cartilage to the thyroid, as I have observed on numerous occasions when operating upon a roarer the second time. Three times during this present year I have done laryngotomy on horses that had been subjected between eight months and two years previously to a double-sided operation in which the "burr" had evidently been employed, and in each of these cases the right arytenoid seemed to have its normal amplitude of swing. It is to be noted that in these three cases the mouth of the ventricle was found intact, and the cord had not healed outward against the thyroid, but continued to present an obstructing ridge to the inspired air. The removal of the deeper two-thirds of the ventricle had not impeded the arytenoid's movements.

I believe that the right side is rarely involved, even though I operate upon it in about 10 per cent of my cases. Postmortem inspection of the posterior and lateral cricoarytenoideus muscles should enable one to settle this question.

One or both ventricles having been removed, the blood is swabbed from the larynx and gently from the depths of the ventricle, and its interior is moistened with a 10 per cent solution of iodoform in sulphuric ether. The wound retractor is removed, and a specially constructed aluminum tracheal tube armed at the end with 4 inches of stiff white rubber tubing is inserted and fixed in the lower commissure of the wound between the cricoid and first tracheal ring by means of a tape passing

through the edges of the skin in front of the tube. The middle of the tape is drawn through an eye in the front part of the plate of the tube, where it passes around a leather button or keeper. The ends of the tape are then tied in a bow-knot in front of the tube.

The advantages claimed for this form of tube for this operation are:

1. The tube is light in weight.
2. It can not become displaced.
3. It does not occupy any part of the larynx even when the head is strongly flexed upon the neck.
4. The rubber tubing projecting from its intratracheal end keeps the tube parallel with the lumen of the trachea, prevents its upsetting, and so softens the end of the tube that no wounding of the tracheal mucosa can occur.
5. It is easy to remove and to introduce.

As soon as the patient begins to struggle the hopples are removed. No food for two or three hours. Afterwards for the ensuing four weeks the patient is restricted to walking exercise in box-stall or at the lead, and is fed lightly as any horse out of work. The tube should be removed daily, cleansed and replaced. Usually if the operation has been one-sided the tube may be removed on the morning of the fourth day and left out. The horse should be watched closely during this day and on the occurrence of the slightest dyspnea the tube should be promptly replaced and continued for a few days. If, however, the horse passes the fourth day comfortably without the tube it should be replaced at night, removed on the fifth day, and if not needed during this day may be left out. Lymphatic animals require the tube for a longer period, as a rule, than do Thoroughbreds or thin-throttled horses.

During the fifth and sixth weeks following the operation the exercise should be confined to walk and slow trot on lunging line, hitched to a light vehicle or under the saddle. After six weeks the horse may do his regular work, because the cicatrix should be so strong that forced respiration will not break it.

The time required for complete contraction of the cicatricial tissue at the site of the stripped ventricle varies within narrow bounds, but is approximately four months. Of those which are cured the great majority have lost the objectionable inspiratory sound and the accompanying dyspnea in six weeks. A few will

exhibit rough breathing at first, but lose it gradually and entirely during the succeeding three to five months. Rarely a horse will remain sound of wind for eight to twelve months following the operation and then will slowly develop inspiratory stridor, due in the few cases that I have examined either to exuberant granulations at the seat of operation, a mucous cyst, or a moderate, slow chondritis, especially of the upper or pharyngeal border of the arytenoid.

As to the danger of cricotomy in the production of a chronic deforming chondritis, I am satisfied that it has been inordinately magnified. I always section the cricoid. Twenty-six per cent of a series of 500 cases with which I kept in touch for five to six months after operation were either improved only to the extent of being serviceably sound or were worse. Undoubtedly many or most of these developed a chondritis, but what proportion arose from perichondritis of the arytenoid and thyroid, and what proportion from section of the narrowest part of the cricoid, I have no means of knowing accurately. From numerous inspections of the interior of larynges of living horses affected with laryngeal chondritis, and careful examination of a few larynges on postmortem, I have been impressed by the fact that the hyperplasia of cartilage was most pronounced in the arytenoid and particularly in its superior spongy half. It was present in less degree in the wide and thick deeper half of the cricoid. In these cases the arytenoid was anchylosed to the cricoid and so thickened as to project into the lumen of the larynx by its anterior and superior borders.

For a short distance on either side of the point of section of the cricoid the latter showed no thickening. In most cases the sectioned ends of the cricoid were found separated by the width of the tip of the index finger, were small, in fact of normal size, and covered with connective tissue. In a few cases the ends of the cricoid were in contact, and at that point there was calcification, forming a lump the size of an ordinary pea, but no observable thickening for an inch or so on either side. It is improbable that infection entering at the exposed ends of the sectioned cricoid manifests itself only at some distance in this and contiguous cartilages.

My reasons for cutting the cricoid are:

1. The larger wound prevents absolutely the aspiration of food particles, saliva, pus, etc., through the trachea to the lungs.

Among more than 700 cases which I have operated upon since 1906 there has not been a single case of inspiration pneumonia.[1]

2. In the hands of the average operator the "burr' does not remove the mouth of the ventricle, but leaves a pocket which will admit the end of a finger. I believe the burr when skilfully used will evert the entire sac, but I know that few learn to do it properly. If students are taught the dissection method alone they must remove the mouth of the sac, the most difficult part by any method, and the fundus comes away easily. This dissection method is impracticable through an incision confined to the crico-thyroidean ligament.

3. Through the larger wound the entire interior of the larynx is open to inspection and to a free and methodical surgical procedure.

4. To my mind, the advantages gained far outweigh the possible complications ensuing upon section of the cricoid.

In conclusion I submit a summary of statements elicited from the owners of 500 horses operated upon between 1906 and 1915. In a questionnaire sent out at least five months after each operation, I asked the following questions:

1. Five months after operation was your horse in your opinion perfectly cured?
2. Five months after operation was your horse merely improved; that is, made serviceable to hunt, run, jump or pull, but with noisy breathing, or a troublesome cough?
3. Was your horse practically unchanged by the operation, or worse?

From 548 such letters I received 500 replies. Of these 355 (71 per cent) answered the first question in the affirmative. Ninety-seven (19 per cent plus) stated that their animals were made serviceable but remained noisy. Forty-eight, or 9.6 per cent, were either no better or were worse after operation.

| | Horses. | Percentage. |
|---|---|---|
| Cured | 355 | 71 |
| Improved | 97 | 19.4 |
| Same or worse | 48 | 9.6 |
| Total | 500 | 100 |

There were no deaths nor injuries attributable in any way to the operations other than the havoc I wrought in some of the 48 larynges of the unsuccessful cases.

[1] Chloroform pneumonia (1 case) excluded.

In this series are included somewhat over 20 animals in which I recognized chondritis before operating. I think the number was 23, but I am not sure. None of these cases were benefited; most were worse. I do not now operate when this condition is recognized. Had these, say, 20 cases been excluded, the results would have been:

| | Horses. | Percentage. |
|---|---|---|
| Cured | 355 | 74 |
| Improved | 97 | 20.2 |
| Same or worse | 28 | 5.8 |
| Total | 480 | 100 |

In the next series of somewhat over 200 cases, the results of which I know only in part, I lost 3 horses. One died within twenty-four hours from pulmonary congestion; a second died within a few hours, showing intense cerebral or meningeal irritation, both deaths the result of faulty administration of the chloroform. A third horse, after operation upon the table, had paraplegia—a broken back.

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*Dakota Farmer* discusses the Government analysis of the runt situation and declares: "You will note that runts are not due to a law of nature but are caused by circumstances that the owner can prevent."

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Argentina has only about one-tenth as many farmers as the United States, but she produces about one-third as many cattle, one-third as many horses, and nearly twice as many sheep. It is only in hogs that the Argentine farmer falls decidedly below the American farmer. * * * Learn everything you can about Argentina. She is our great competitor."—*Wallaces' Farmer.*

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In noting the purchase of 250 horses from the King ranch, Texas, by a Mexican general staff officer, the *Brownsville Sentinel* says: "They are larger and stronger than the average horses and because of the similarity of climates are more adaptable than horses bought in the northern and central parts of the United States."

# ICTERO-HEMOGLOBINURIA IN CATTLE[1]

*By* EDWARD RECORDS *and* LYMAN R. VAWTER

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THE DISEASE of cattle to which we have provisionally given the designation of ictero-hemoglobinuria, more commonly known in the districts where it occurs as "red-water disease," appears in the light of recent developments to be more widespread in its occurrence and therefore of more general interest than was at one time supposed. While primarily a disease of cattle, our attention was recently called to a case in a sheep which showed symptoms and lesions identical with those in bovines. This disease is now known to occur widely over the Pacific Coast and the western portion of the intermountain country, its presence having been conclusively demonstrated in western Nevada, the adjoining portions of California, and in Siskiyou, Shasta, Marin and Los Angeles counties in the latter State. In Nevada, at least, it is known to have been present for from twenty to twenty-five years, though not attracting marked attention until rather recently. Its presence has also recently been demonstrated in Oregon.

While spectacular outbreaks involving a large number of animals simultaneously or within a short period of time in the same herd are infrequent, they do occasionally occur. The more usual history is the loss of an occasional animal throughout the season, such losses often extending over a long period of years on the same ranch. In the aggregate, of course, losses of this sort are economically as serious as acute outbreaks more likely to attract marked attention.

The disease has received intensive study at the Nevada Agricultural Experiment Station since 1914, and has also been the subject of considerable investigation by various workers in California. The literature dealing with the subject, however, is rather sparse. An article by Dr. K. F. Meyer, "Studies to Diagnose a Fatal Disease of Cattle in Mountainous Regions of California," appeared in the JOURNAL OF THE A. V. M. A. in February, 1916. Dr. J. P. Iverson presented a paper on this

[1] Presented at the fifty-eighth annual meeting of the American Veterinary Medical Association, Denver, Colo., September 5-9, 1921.

disease at the Los Angeles meeting of the California Veterinary Medical Association in 1916, and Doctors Mack and Records presented a paper entitled "Studies of an Obscure Cattle Disease in Western Nevada" at the Kansas City meeting of this Association in 1917. This is apparently about all that has appeared dealing specifically with the condition under consideration. Since the presentation of the latter paper a great deal of work has been done at the Nevada station, and it is some of the developments in this work since that time that it is desired to present in this paper.

Limitation of time will not permit of a very detailed presentation of what has been done, and some aspects of the work will have to be almost entirely ignored at this time, to be dealt with later in fuller detail in a publication on this subject.

The clinical manifestations and gross pathology of this disease are very well set forth in considerable detail in the papers by Meyer and Mack and Records referred to, but it is perhaps essential to review them briefly after this lapse of time.

The typical clinical symptoms shown from the time cases are usually discovered are as follows: Appetite, rumination, milk secretion and bowel movements are suddenly suspended. The animal stands apart from the herd, with its back arched and abdomen tucked up. The coat is dry, lusterless and staring. The animal is loath to move and may grunt with each step. The facial expression is distressed; the eyes have a characteristic sunken appearance. Respiration is moderately accelerated and of a shallow costal type; a characteristic grunt usually accompanies each expiratory movement. The muzzle is dry and hot. The visible mucous membranes are icteric, but may assume a pigmented reddish color. Generally there is a marked rise of temperature during the outset of the attack which may reach 106. The temperature drops later and may be subnormal for a considerable period before death. The pulse is increased in frequency but is thready. Venous pulse is very pronounced. As the disease progresses, bowel movements become very active, with frequent passages which are soft, small in amount, and range from slightly catarrhal to almost pure blood. Urination is frequent and copious; there is well-marked hemoglobinuria, the urine usually attaining a deep garnet color. This continues until the animal suddenly collapses and dies after a brief agonal period.

The clinical blood picture manifests a rapid destruction of erythrocytes with hyperleucocytosis, the erythrocytes diminishing to two million or lower, a destruction of approximately 65 to 70 per cent of the number normally carried by cattle in this latitude. The leucocyte count is high, averaging 40,000. A high degree of hemoglobinemia accompanies this pathological blood change.

The duration of illness after detection ranges from a few hours to a few days, averaging perhaps thirty-six hours. The mortality is very high, over 90 per cent at least, in cases marked enough for reasonably certain diagnosis.

The lesions found at postmortem are strikingly uniform within certain well-defined limits of variation. Rigor mortis develops rapidly after death. Bloody mucous discharges from the nostrils and anus are observed. The conjunctiva is icteric and may exhibit a reddish pigmented color. There is marked cadaveric icterus. Numerous petechial hemorrhages are found in the subcutis. Occasional cases manifest pronounced localized hemorrhagic edema and exudation in the subcutis along the sides of the neck and shoulders.

The abdominal cavity contains a varying amount of hemorrhagic transudate, in some cases as high as two liters. The omentum, parietal peritoneum and mesentery are extensively mottled with ecchymotic and profuse hemorrhages and diffuse imbibition around the blood vessels. The connective tissue of the duodenal loop and the colon manifests a hemorrhagic edema. The entire omentum is quite frequently flecked with reddish fibrin deposits. The serosa of the intestines is brick red in color.

The wall of the duodenum is thickened and edematous, occasionally manifesting a fibrinous adhesion to the liver. The contents may be either deeply bile-stained or bloody. The lining epithelium is desquamated and shows numerous submucous hemorrhages.

The jejunum, ileum and colon contain either viscous bile-stained or blood-stained material. The lining epithelium is desquamated and may show numerous deep erosions. Submucous hemorrhages are constantly observed. The regional lymph nodes are swollen, edematous, and manifest a reddish pigmentation of the cortex. The abomasal mucosa is congested and sometimes manifests petechiæ.

The liver is always enlarged, icteric in color and soft in con-

sistency. A large infarct resulting from thrombosis of the portal vein is always found on the parietal surface, usually at the upper or lower extremity. The infarct on incision is irregular in outline and the thrombus of the portal vessels supplying the infarct area is readily observed. The serous surface of the gall bladder manifests diffuse areas of bloody imbibition and in some cases fibrinous exudate. The bile is excessive in quantity, dark in color, and contains many coarse flocculi.

The spleen is usually normal in size and in most cases slightly soft in consistency. On the capsule well-defined ecchymoses are observed.

The kidneys are dark brown in color with numerous punctate hemorrhages in the cortex. The medullary portion manifests a diffuse reddish color and a streaked appearance. The kidneys are friable and bloody fluid is apparent on incision. A very high degree of hemoglobinuria is always noted. The serosa of the uterus often manifests petechiæ. The subcutis and viscera of the fetus exhibit hemorrhages very similar in character and location to those in the cadaver of the mother.

In the thoracic cavity varying amounts of fluid are found in both sacs; in the majority of cases it is deeply blood-tinged. The parietal pleura may have fibrin deposits which are reddish in color. Subpleural hemorrhages varying in extent from petechiæ to diffuse suggillations are very common. The lungs in a majority of cases manifest a slightly reddish pigmented color which changes to a decided icteric color on exposure to air. Edema is present to a varying degree. The trachea, larynx and pharynx manifest either petechiæ on the mucosa or diffuse bloody imbibition. The regional lymph nodes are swollen and oedematous, manifesting reddish pigmented color. The pericardium manifests suggillations or petechiæ and the pericardial fluid is deeply blood-tinged. The epicardium manifests petechiæ and hemorrhagic extravasations, particularly along the coronary vessels and auricles. The endocardium of the left ventricle always exhibits more or less diffuse subendocardial ecchymotic hemorrhages, occasionally suggillation in type. The myocardium is turbid and friable.

The brain and meninges manifest extensive perivascular hemorrhages, but to lesser degree than noticed in other parts.

At first confused with anthrax, later with hemorrhagic septicemia, but now apparently conclusively proven to be a dis-

tinct disease entity, the specific etiological factor or factors in this disease are still not absolutely demonstrated. The striking and uniform lesions found in the liver of these cases would seem to point very strongly to a more or less specific infection which established itself at that point, gaining entrance from the digestive tract either by way of the portal circulation or the lymphatic system.

Disregarding the extensive work done at this station earlier in the investigation of this disease largely in an effort to demonstrate it as being an atypical form of hemorrhagic septicemia, our bacteriological studies have been to a great extent concentrated on this liver lesion, supplemented by general cultural work throughout the carcass, carried on collaterally with it. During the last two years these studies have stressed particularly the anaerobic organisms found, and the bacterial flora of this group has been found to be, as a rule, quite constant, after making suitable allowance for the age of the material examined and the conditions under which it was obtained and transported.

Briefly summarized, these bacteriological findings are as follows:

*Bacillus botulinus* was recovered in four cases from the liver infarcts; type B in two cases on one ranch; type A from a case on an adjoining ranch, and from another case on a ranch several miles distant but directly connected with the other two by drainage water. Other organisms were associated with it.

*B. oedematiens* was recovered from the liver infarct of one case associated with other organisms. *B. histolyticus* has also been encountered, as have some other not definitely classified anaerobes.

Colon organisms of the coli-aerogenes and *B. communis* types are frequently found as secondary invaders. A Gram-positive diplococcus apparently belonging to the Type IV pneumococcus group is encountered in every case. *B. sporogenes* has been isolated from the liver infarct in a majority of cases.

*B. welchii,* Type IV, has been found in every case where the cultural methods used and the conditions under which the work was done were such as to make the recovery of this organism possible. It can be recovered not only from the liver infarct but from the portal, mesenteric and mediastinal lymph glands, spleen and heart muscle. In no naturally occurring cases, however, have we been able to recover this organism from the blood

stream, the tendency being apparently for localization, particularly in the organs mentioned. This is the only organism recovered which has shown the presence of hemolytic properties, a fact which, taken together with its uniform presence, has led us recently to concentrate our attention upon it as the possible bacteriological cause of this disease. It may be fitting to mention that no cadaver was considered for bacteriological study which had been dead over four hours. Animals manifesting typical clinical symptoms were killed for experimental bacteriological study. *B. welchii* was isolated from liver infarct, spleen, mesenteric and mediastinal lymph glands and heart muscle.

All of the organisms recovered which proved pathogenic for small laboratory animals, and some of those which did not, were used for cattle inoculations in the attempt to reproduce the disease. *B. botulinus* and its elaborated toxins proved highly pathogenic for cattle, but caused only typical symptoms and lesions of botulism, producing nothing simulating the natural cases of this disease.

*B. oedematiens* proved highly pathogenic for cattle, animals succumbing in fifteen hours following injection of small quantities of culture into the mesentic veins by means of a laparotomy. The latter procedure was carried out in an effort to simulate the supposed natural channel of infection as closely as possible. While the lesions produced were suggestive of this disease as it naturally occurs, they were not as much so as were those produced by *B. welchii,* which will be dealt with later; and this fact, together with the finding of this organism only once, led to its dismissal as a possible causative factor.

*B. welchii* administered orally to four cattle in doses as high as 1,000 mils of culture daily for one week produced no effect beyond a slight diarrhea which could readily have been induced by the amount of foreign material contained in the culture ingested. Direct inoculation experiments were, however, more encouraging.

Approximately 30 head of yearling and 2-year-old cattle were given 25 to 35 mil doses of a 24-hour glucose-meat media culture deep in the muscles of the thigh. All of the animals developed more or less extensive edematous swellings at the site of injection, and of this number two developed decided hemoglobinuria, icteric visible mucous membranes, sunken eye appearance,

constipation followed by diarrhea and great depression entirely typical of natural cases. Blood examinations made after the development of hemoglobinuria also corresponded closely to those made on natural cases. The erythrocyte count fell as low as 3,000,000, as compared with the average normal, which in our locality is known to average about 6,000,000.

The postmortem lesions, while not absolutely identical with those of natural cases, were as close as could be expected, considering the different method of infection. The general cadaveric icterus, subserous hemorrhagic edema and hemorrhages were present. The liver infarcts were small and multiple but typical. The retained bile in the distended gall bladder was tarry in color and flocculent. Kidneys manifested the typical dark color with numerous cortical hemorrhages. The bladder was distended with dark garnet-colored urine. The lungs showed a reddish pigmented appearance and were slightly edematous. The heart manifested the typical petechial epicardial hemorrhages with the diffuse subendocardial hemorrhage in the left ventricle. The lymphatics manifested a reddish pigmented color and were edematous. We feel that the multiplicity and small size of the liver lesions is amply accounted for by the different channel of infection. None of the other organisms recovered that were used for inoculation experiments proved pathogenic for bovines.

Dr. F. W. Wood of Berkeley, working independently on cases of this disease occurring in California, has informed the writers in personal communications that he also has isolated *B. welchii* almost uniformly when suitable material was available for examination. Inoculation experiments on bovines performed by Dr. Wood with the strains isolated by him also produced results apparently about identical with our own.

The findings so far made in connection with *B. welchii* seem to indicate quite strongly that this organism may prove to be responsible for the clinical symptoms and lesions seen in these cases. The fact that *B. welchii* is not found in pure culture does not exclude this possibility, the importance of the adjuvant role of nonpathogenic aerobes and anaerobes in *B. welchii* infections being clearly pointed out by the Committee on Anaerobic Bacteria and Infections, Special Report, Series 39.

Before forming a definite conclusion, however, as to the actual etiology of this condition, certain reservations should probably

be kept in mind in this connection with regard to *B. welchii*. This organism is well known to be practically world-wide in distribution and may be even more plentiful in nature in parts of the world other than where this disease occurs. Also the strains isolated by us do not appear to have any unusual pathogenicity for bovines, as evidenced by the comparatively small percentage of deaths among animals inoculated with really large doses as practiced by us.

It would seem, therefore, most probable that there is some as yet undetermined predisposing factor or factors which make it possible for this organism to assume invasive properties and establish itself in the living tissues of apparently normal animals. Just what these factors are, it will probably require considerable additional study to determine. Some of the apparently predisposing conditions are, however, already fairly well established and may be briefly outlined as follows:

Generally speaking, the disease is more or less a seasonal one, cases beginning to appear in late spring or early summer and increasing in frequency throughout the warm season, being most numerous at the end of the summer or early fall and practically disappearing by December. There are occasional exceptions to this, cases occurring in the dead of winter.

There also seems to be a very close connection between telluric conditions and the occurrence of this disease. The premises where the most serious losses occur are almost invariably those lying at the bottom of a more or less extensive drainage area where surface and superficial underground water collects with no natural point of outlet. On many premises the disease appears only in the late summer when the sloughs and natural pools reach their maximum of stagnation and concentration. Moving back from these areas toward the foot-hills, there seems to be a progressive diminution both in the number and the severity of the cases, the percentage of recoveries being higher. Once out of the irrigated areas on the dry open range, the disease does not occur, at least to any appreciable extent. There are, it is true, occasional exceptions to this, cases occurring in feed lots when the cattle are on hay and receiving well water. As a general thing, however, the hay in these instances is harvested on the same sort of land where the disease occurs among animals on pasture. It would seem, therefore, that there is a very close

connection between this disease and the presence of excessive amounts of what might be called dead water and relatively high temperature. The nature of the pasture itself does not appear to be a material factor, cases being almost equally frequent on natural wild hay meadows and alfalfa pastures.

The treatment of these cases can not be said to be on anything approaching a satisfactory basis at this time. In the absence of definite knowledge as to a bacterial cause, nothing which can be properly classed as a specific antiserum has as yet been used. Anti-hemorrhagic-septicemia serum has been used extensively, but we now know this material to have been nonspecific, and it will be considered merely as a serum in summing up this phase of the question.

As a matter of routine practice, it is found that the intravenous administration of horse serum in doses of 200 mils, preferably repeated several times at intervals of 8 to 10 hours, supplemented by the administration of fairly active but non-irritant purgatives, such as large doses of ground flaxseed boiled up in a liberal amount of water to which has been added a pound or less of sodium sulphate, is of benefit. Stimulants can apparently also be administered to some cases advantageously. Treatment such as outlined when started fairly early in the course of the disease appears to bring about a marked reduction in mortality, provided the case is not of an unusually severe and acute or fulminative type. Cases of this sort and those in which treatment is started rather late in the attack appear to be but little influenced by therapeutic measures of any kind.

Disregarding the extensive use of hemorrhagic septicemia bacterins and vaccines, which have proven valueless for reasons which are now quite obvious, this disease being in no way associated with infection by *B. bovisepticum,* very little has as yet been done along the lines of direct control by the use of biologics.

Recently when indications pointed more and more strongly toward *B. welchii* as an etiological factor, work was undertaken along the lines of specific immunization, using an aggressin prepared by inoculating young cattle with this organism in the same manner as is blackleg aggressin. We have to date treated approximately 1,200 animals with this aggressin in the districts where this disease usually causes the heaviest loss. Part of the

material so used was prepared and supplied to us for experimental use by Dr. Wood, and the balance was prepared in our own laboratories. As this portion of the work was undertaken only during the present season, it is too early to make any definite statement as to the results obtained, but present indications are that the use of this aggressin has afforded at least some protection, the percentage of cases occurring among the treated animals being appreciably less than among the untreated controls, an adequate number of which were left in each herd. Dr. Wood has also used this material to some extent in California, with what result we do not know.

The more general measures of control which seem clearly indicated by our observations on the occurrence of this disease are unfortunately impracticable on account of the great expense involved. To drain the lands properly where excessive water is now present either as a result of natural conditions or unjudicious irrigation in the past would require in most cases engineering work of considerable magnitude. What it has been possible to do along this line on some ranches in the way of keeping cattle out of pastures where excessive water was present, and the practice of more careful irrigation so that dead water was not allowed to accumulate, has apparently resulted in a material lessening of the losses, and such procedures are certainly indicated in the light of our present knowledge.

It is of course obvious that if some thoroughly effective means of specific immunization could be devised it would afford by far the cheapest and most practical means of controlling this disease, placing it on a par with anthrax and other diseases which are now so well held in check in this way. Unfortunately the use of the aggressin referred to above does not give any present promise of being feasible on a large scale, even if it should prove effective in preventing the disease, owing to the fact that the very small percentage of successful inoculations of cattle with *B. welchii* for its production would make the cost almost prohibitive. This may, of course, be overcome by the devising of some more satisfactory technique for its preparation. The success of this aggressin would, of course, in any event, depend entirely on *B. welchii* being the actual causative factor in this disease.

# SURGICAL TECHNIQUE—SUTURING[1]

*By* H. E. KINGMAN

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IN presenting this paper, it is to be understood that no attempt has been made to cover completely the subject under discussion. The writer is anxious to present the cases in mind in such a manner as to interest his fellow surgeons, leaving out all details that might be essential to a group of students or others less able to grasp the context than those for whom this paper is intended. It is presumed that we are past the basic steps and are interested only in solid facts. In this paper I hope to present and illustrate a phase of technique that has been very useful to me and I am sure can be to others.

Suturing enters as an important factor in nearly every operation, and frequently occupies as much time as incision, dissection and hemostasis. In Cæsarian section, for example, one's time is principally taken up in suturing. Many other operations demand an equal amount of attention to uniting the wound. Next to cleanliness, the operator is most concerned in thoroughness or carefulness, but following these in importance comes speed. A patient can withstand a severe operation, provided the animal is not made to endure it for a long period of time and given large amounts of anesthetics or restrained in a cramped position. The time element enters in as a matter for careful consideration in conserving the strength and resistance of the patient and in obviating surgical shock. Speed in suturing goes a long way toward reducing the length of time that the patient must remain under restraint or anesthesia.

With the idea in view of improving our technique in suturing, I wish to present several methods of tying knots.

It is to be remembered that the hands are frequently covered with blood and that securing the ends of the suturing material is liable to consume more time than it should.

The needle having been passed through both margins of the wound, it is held with the needle holders in the right hand.

[1] Presented at the fifty-eighth annual meeting of the American Veterinary Medical Association, Denver, Colo., September 5-9, 1921.

The free end is picked up with the thumb and finger of the left hand and the opposite suture grasped with the second and third fingers. The sutures are then crossed until the free end may be drawn under by the second finger; releasing the hold with the thumb and first finger makes the first part of the knot. The free end is again grasped by the thumb and first finger, the second and third fingers are laid with the palms up, while the needle end is crossed over again and the second finger draws the other end under, completing the knot.

Forceps may be used instead of fingers. The following method is preferred by many operators. We call it the two-forceps method. After passing the suture through both margins of the wound, the suture is wrapped around the end of thumb, forceps held in the left hand; the free end of the suture is then grasped with the forceps and drawn through the loop. The same thing is repeated in the opposite direction, completing the knot.

The four-forceps method is less practicable than the first two described, but is very useful when skilled assistance is available. The assistant grasps the needle end of the suture three inches above the wound with the forceps in his right hand; he then ties the first part of the knot the same as in the second forceps method. The operator then completes the second part of the knot by the same process.

I wish to describe in detail the application of three sutures that have proved to be especially useful. The first of these was the so-called interrupted mattress suture. Its advantages lie largely in the fact that it brings into apposition raw surfaces, turning the external surface away from the margin of the wound.

To illustrate one instance in which the mattress suture is particularly adapted, I wish to discuss the treatment of split ears. The split ear is of common occurrence and wherever barbed wire is found. However, this is not the only offender. One was brought to our attention in which a Jersey bull split his ear for a length of four or five inches on a nail, giving him a very unsightly ear, especially if he was to be used for show purposes. It is seldom advisable to attempt suturing an accidentally split ear until the edges have completely healed. The operator may then have a clean field upon which to work.

The technique consists in preparing the field in the usual manner; the entire ear is scrubbed with Dakin's solution, and the area lathered with tincture of green soap. The hair should

be shaved from both sides of the ear for at least a space of half an inch in width. Anesthesia consists in chloral enough to quiet the animal. Some beneficial results have been obtained from the use of apothesine over the posterior and internal auricular nerves. A sterile sheet with a hole in the center is placed over the head and the ear drawn up through the hole. All instruments should be sterile, as well as the operator's hands. An incision is made on the edge of the healed surface, exposing two flaps of skin and the yellow fibrous concha. The flaps are loosened to the extent of one-fourth inch and the protruding concha removed the entire length of the incision. The operation is repeated on the opposite side. The cutaneous surfaces are then united up by means of mattress sutures of linen, one-half inch apart. By this method the fresh surfaces are maintained in apposition. The inside and outside of the ear are sutured separately. The united surfaces are then covered with a solution made of gum mastic in benzol. At the end of three days the suture should be examind for signs of infection. Then if moisture is present or if there are other signs of pus, the infected suture should be removed and the wound bathed in alcohol or 1 per cent of tincture of iodin. Under ordinary conditions the wound unites by first intention. Occasionally a few of the sutures must be removed or treated with alcohol, but if given the proper attention small infected areas need cause no alarm. In fact, cases have been operated upon and given no further attention after the first day and made complete recovery, although a few of the sutures became infected.

I should like to call attention in detail to two other methods of suturing. The first of these is a continuous peritoneal and subcutaneous suture, used especially in small animals where the peritoneum and abdominal walls are to be closed.

The thumb forceps lifts the peritoneum on the right side away from the viscera, and the needle is passed through the muscle and peritoneum. The peritoneum of the left side is then lifted and the needle passed through the peritoneum and muscle from beneath. The suture is then grasped with the fingers or forceps, drawing the peritoneal surfaces together and lifting them so that the needle may pass through both at the same time. This is repeated until the peritoneal wound is closed by a simple continuous suture. The skin is then grasped and held, while a

subcutaneous suture is placed in it. This suture is then carried continuously from one side to the other until the skin wound is closed. The two ends of the suture are united by a surgeon's knot. If No. 1 gut is used, the knot should be small enough to be completely hidden.

The second is the mattress suture as used in closing the wound and hernial ring in the treatment of ventral hernia.

An elliptical incision is made over the fundus of the sac and the skin carefully removed, exposing the serous sac. This separation of cutaneous and serous coats is continued until the hernial ring is reached. The tunic and fascias forming the ring are firm and may be easily recognized by the sense of touch. One frequently encounters a thick layer of fat lying close to the hernial ring, which impedes the progress of dissection. Hemorrhage should be slight and is easily controlled by means of sponge and forceps. One should avoid sponging as much as possible, since it is a common source of infection. Repeated wiping of the tissues lowers their resistance and inhibits repair.

The next step consists of preparing the flaps of fascia for suturing. One begins by splitting the margin of the ring as close to the parietal peritoneum as possible, taking great care not to invade the peritoneal cavity. The flaps should be one-half to three-fourths of an inch in width. A full curved needle threaded with No. 4 catgut is then passed down through the left flap at a point one-half inch from its margin, down through the margin of the opposite flap, then up through the margin of the same flap and up through the left flap one-fourth of an inch from the starting point. This constitutes a mattress suture. Repeat the sutures over the length of the hernial ring. The sutures should then be drawn tight. This will force the right flap beneath the left, causing them to overlap one-half inch. The free margin of the right flap should then be sutured to the left surface by means of a continuous suture. The skin should be sutured with a mattress suture, bringing into apposition considerable denuded surface.

A place for drainage is left at the anterior commissure of the cutaneous wound. One may insert a strip of gauze to be removed at the end of 12 hours. The entire wound, except the place for drainage, is covered with gum mastic and gauze. The wound will unite by first intention if reasonable care has been observed to avoid the introduction of infection. The skin su-

tures may be removed in about five days; the catgut sutures are permitted to take care of themselves.

The advantages of this technic over some of the others commonly used are that the peritoneal cavity is not invaded, and further, that the overlapping of the fascias insures a permanent union and obliteration of the hernia. Also there is no danger of injury to intestine or other viscera. If one should fail in the matter of asepsis, there is little to fear from peritonitis, since one has only a wound of the skin and subcutaneous tissues to treat.

In case of infection, one or two skin sutures should be removed and the wound dressed with Dakin's solution, or a 2 per cent alcoholic solution of iodin.

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## HORSES AND MULES IN WAR

In public recognition of the important services performed by horses and mules in the United States Army during the war, a large bronze tablet has been placed on the east wall of the State, War and Navy building, Washington, D. C. It depicts a field artillery piece drawn by four spirited horses, with their riders and two cannoneers on the field of battle, and makes a vivid picture of action. Underneath in raised bronze letters is the following descriptive inscription:

"This tablet commemorates the services and sufferings of the 243,135 horses and mules employed by the American Expeditionary Forces overseas during the great world war which terminated November 11, 1918, and which resulted in the death of 68,682 of those animals. What they suffered is beyond words to describe. A fitting tribute to their important services has been given by the commander-in-chief of the American Expeditionary Forces, Gen. John J. Pershing, who has written: 'The Army horses and mules proved of inestimable value in prosecuting the war to a successful conclusion. They were found in all the theatres of preparation and operation doing their silent but faithful work without the faculty of hoping for any reward or compensation.'

"This tablet is erected by friends of the horse and mule in the United States, under the auspices of the American Red Star Animal Relief, a department of the American Humane Association."

# SOME DISEASES OF THE DIGESTIVE TRACT IN DOGS AND CATS[1]

*By* F. H. McNair

*Berkeley, California*

ASIDE from the sentimental viewpoint, it seems to me that it is well worth while from an economic standpoint to relieve the ailments and prolong the lives of man's faithful allies and companions, the dog and the cat. Cats yearly save to mankind much valuable material by killing rats and mice. The usefulness of the dog is varied, but one of his chief offices is that of private policeman. Many a house, especially in our cities, has been protected from burglary by the family dog. So let none of us consider these animals as beneath his professional dignity.

## Foods

Since much sickness in pet animals is caused by improper feeding, let us consider briefly the subject of proper foods.

Many breeders and others believe that dogs and cats, being by nature carnivora, should be fed entirely upon a raw-meat diet. It is true that a generous diet of raw meat will cause rapid, thrifty growth in puppies and kittens and make them salable in the least possible time. But if such a diet is continued indefinitely the animal will sooner or later become diseased. The advocates of meat feeding overlook the fact that in the wild state dogs and cats are obliged to exercise considerably in hunting their food, while our domestic animals are usually overfed and underexercised. Many dogs and cats are successfully raised and kept in good condition on a mixed diet that contains a minimum amount of meat. Also heavy eaters of meats are more inclined to be vicious than are non-meateaters. In short, the feeding of meat should always be governed by good judgment.

Though an occasional feed of liver may be permissible, an exclusive diet of it is usually more injurious than other forms of meat, because of the concentrates and waste products contained in it. Bones, except in the form of bone meal, should not be fed unless they are large bones that can not be chewed down. Milk

[1] Presented at the fifty-eighth annual meeting of the American Veterinary Medical Association, Denver, Colo., September 5-9, 1921.

in the ration of both dogs and cats is usually permissible, provided the animal can retain it.

In order to lessen the tendency to eat poisoned or tainted food on the outside, my patrons are usually advised to feed their cats and dogs twice a day, one light and one fairly heavy meal.

Foods we have found satisfactory are: Dog biscuit and its derivatives; the various mushes, except that oatmeal and cornmeal must not be fed in too large amounts, especially in hot weather; boiled rice; macaroni; stews containing a small amount of meat but plenty of such vegetables as carrots, turnips and cabbage, little if any potato. Stale bread, if fed dry, may be tolerated, but we have found that the continuous feeding of potatoes or soaked-up bread usually causes a trouble—some diarrhea in both dogs and cats.

For bulldogs and other large breeds we find an excellent food consists of a prepared meal which is mixed with cold water and baked in a slow oven for 1½ hours. This meal is a combination of oatmeal, cornmeal, wheat meal, barley meal, soya-bean meal, blood meal and fish meal.

## DISEASES

The diseases to be considered are only those that I consider of the most importance, and the cases cited are those that have occurred in my own practice.

### THE TEETH

The teeth of both dogs and cats should be occasionally examined and any accumulation of tartar should be removed so as to prevent sore gums and decay of the teeth. It may at times be advisable to fill small tooth cavities, but as a rule when the veterinarian sees the case decay is so far advanced that extraction is the better procedure. In making extractions considerable distress to the patient and owner can be avoided by injecting the gums with a nontoxic anesthetic. Of course this should command an extra fee, which will be cheerfully paid by many owners.

In one dog recently treated an aggravated case of articular arthritis was apparently due to the absorption of pus from 12 badly decayed teeth.

### TUMORS

Papillomas often found on the mucosa of the cheeks of dogs usually yield to surgical removal and cauterization, but in one

dog under my observation they later developed a malignancy. Surgical removal or treatment of malignant tumors in any portion of the digestive tract seems useless, and to save suffering the chloroforming of the animal should be advised. One case can be mentioned of a dog with cancer of the jaw. The growth was removed three times within two months, but to no purpose.

### Harelip and Cleft Palate

These deformities often occur in the same individual, and while harelip alone may be successfully operated upon, my experience with both conditions has been discouraging.

### Ranula

This cystic tumor underneath the tongue usually yields to surgical removal, though in one cat so treated the operative wound refused to heal.

### Necrotic Stomatitis

In my experience simple stomatitis is uncommon, and the necrotic type, although evidently infectious, seems to occur sporadically. The infecting agent is possibly *Bacillus necrophorus,* though why it should attack some animals and not others is a puzzle. Weak, debilitated dogs are supposed to be the most susceptible to the disease, but in my practice it has occurred largely in apparently strong, healthy dogs. One case in mind was that of a large, vigorous collie dog, which, on returning from a tramp in the hills with his owner, drank freely of stagnant water. The next day he was out of sorts, and three days later necrotic stomatitis had developed and in a week's time it proceeded to a fatal end. Other cases have developed apparently after the eating of garbage.

The symptoms are uniform and easily recognizable. In the early stage the gums are red, swollen and sensitive; there is some salivation and a temperature of 2 to 4 degrees above normal. In a few days ulcers develop on the gums and cheeks, there is almost a continuous flow of saliva of a stringy, sticky character, often blood-stained, and the odor is intensely disagreeable. The ulcers soon extend to the stomach and intestines; diarrhea usually occurs; the temperature becomes subnormal, the animal grows rapidly weaker and dies.

The writer has tried many forms of treatment, but with suc-

cess in only a few cases. The successful treatment consisted in swabbing the visible ulcers with tincture of chloride of iron and giving teaspoonful doses of the same, well diluted with syrup, every three hours, together with 4 c.c. hypodermic injections of 50 per cent alcohol three or four times daily.

### FOREIGN BODIES

When in the esophagus foreign bodies may be removed by gently passing a probang, though as a rule it is safer to produce emesis with a hypodermic injection of 1/20 grain apomorphine.

Foreign bodies in the stomach are of great variety and may be removed by first giving a liberal does of sweet oil as a lubricant, followed with a hypodermic of apomorphine.

Foreign bodies in the intestines must be regarded as very dangerous. I always advise against the feeding of bones, because frequently we find that a sharp bone has caused death by puncture of the intestinal wall. In old dogs especially, because of the lessened amount of hydrochloric acid secreted by the stomach, bones will pass through the gastro-intestinal tract undigested.

I wish to mention four outstanding cases:

*Case 1.*—A 12-year-old Irish setter dog with symptoms of impaction. By palpation an obstruction could be felt in the intestines. Large doses of oil, together with other physics and copious warm-water enemas, had no effect and the patient died. Postmortem examination revealed, lodged in the small intestines, a stony mass of partly digested bones 12 inches long and 2 inches in diameter. The mass was so hard that it required a blow from a hammer to break it.

*Case 2.*—A large 6-year-old collie, to which, in spite of previous trouble, the owner had continued the feeding of bones. The history was that he seemed perfectly well when turned out of the house in the morning, but half an hour later seemed to develop an extreme weakness of the hind legs. On examination the pulse was very thready and the visible mucous membranes were pale. Internal hemorrhage, following intestinal puncture, was the diagnosis. An hour later the dog was dead. Postmortem examination revealed the abdominal cavity filled with blood, and in the wall of the rectum was a tear 3 inches long. In the small intestines the passage of a sharp object, evidently a bone, could be traced by the denudation of the mucosa.

*Case 3.*—A 10-months-old Airedale dog with a history of good health till within a period of two weeks, when he developed an inability to retain food on his stomach. At the time of my visit the dog was in a dying condition from starvation, but I scoffed at the owner's statement that the trouble was due to a good-sized hard rubber ball that the dog had accidentally swallowed three months before. However, postmortem examination revealed such a ball, two inches in diameter, firmly lodged in the duodenum. Evidently the ball had remained harmlessly in the stomach for 2½ months, but had finally been forced through the pylorus, effectually blocking the duodenum.

*Case 4.*—A 3-months-old Japanese spaniel puppy, suffering with constipation. Laxatives revealed the presence of numerous pieces of coal, and death finally resulted from a prolapse of the rectum. The owner stated that he knew of the pup's coal-eating habit, but did not consider it harmful, as the mother had always eaten coal!

### Hair-balls

Long-haired dogs and cats are quite apt to swallow considerable hair in the process of licking themselves, and are sometimes made dangerously sick by the accumulated mass. Owners of such animals should be advised to brush their coats thoroughly every day to remove the loose hair and also to give the animals a dose of sweet oil twice a week to prevent hair-balls forming. When other methods fail daily copious enemas of warm water will prove effective in removing hair-balls.

### Gastritis

Gastritis may be acute, due to some temporary irritation, or chronic, when associated with some hopeless condition such as cirrhosis of the liver, often found in old dogs and cats. Acute gastritis is often due to overloading of the system with food, so that if the patient is not too weak a thorough washing out of the entire gastro-intestinal tract with a warm normal salt solution will often clear up the condition. Of course the patient should not be allowed to eat any food for several hours and to drink only small quantities of water. When food is given it should consist of beef juice, the white of eggs or a small amount of raw beef. Medicinal treatment should consist of bismuth and pepsin or sodium bicarbonate and extract of pawpaw. If torpidity

of the liver is suspected, good results can be obtained by giving small doses of calomel or aromatic cascara.

### COLIC

Colic is often due to the presence of indigestible food, but may be caused by impacted masses of worms, which condition frequently causes the death of puppies. One peculiar case recalled was that of an 8-months-old Chow dog imported from China. Being a boarder, he was under our observation for four weeks, and during that time was in apparent good health. Suddenly one night he was seized with violent colicky pains, which continued until his death eight hours later. Large doses of morphine and chloral had no effect whatever. Postmortem examination revealed a severe inflammation of the small intestines. For a distance of 14 inches the intestinal wall was much thickened, and hanging to the mucosa were many hookworms of unusual appearance under the magnifying glass. Prof. Freeborn, Assistant Parasitologist of the University of California, discovered this hookworm to be *Uncinaria stenocephala,* a type hitherto unreported in the United States. This emphasizes the fact that on the Pacific Coast at least we must be on our guard against hookworm infestation in dogs.

### CONSTIPATION

Old dogs and cats are very subject to constipation, but it can be controlled by rational feeding and regular doses of sweet oil with an occasional laxative pill.

### DIARRHEA

Diarrhea is the most common and troublesome condition in the raising of puppies and kittens. It easily leads to an incurable chronic catarrh or fatal enteritis or prolapse of the rectum. The cause may be intestinal worms, improper food, or, what is quite common, the deadly patent worm medicines. Distemper also sometimes first manifests itself in this way.

The treatment should consist of small repeated doses of castor oil followed by bismuth to effect, or the following:

(1) Tinct. opii camphoratæ..... 1 dram
Misturæ cretæ ..... 2 ounces
Syrupus simp. q. s. ..... 3 ounces
M. Sig. 1 teaspoonful every two or three hours.

(2) Milk of bismuth ..... 2 ounces
Elix. catnip and fennel ..... 1 ounce
Simple syrup q. s. ..... 4 ounces
M. Give ½ teaspoonful every three hours.

Some cases yield to small doses of copper arsenite when other treatments fail.

The food should consist of boiled rice to which is added ground beef. No milk should be allowed in most cases, and then only if boiled. The indiscriminate use of patent worm medicines can not be too strongly condemned.

If in doubt as to the presence of worms in a dog or a cat, a small dose of arecoline, provided the animal's condition will warrant it, is often useful as a diagnostic agent.

### Enteritis

Enteritis, especially when following distemper, is a discouraging condition to treat. I have had some good results when other measures failed by giving hypodermic injections of 50 per cent alcohol three or four times daily and by mouth a teaspoonful each of powered gentian and tannin suspended in simple syrup, the dose to be repeated two or three times daily.

### Hemorrhoids

Hemorrhoids can often be controlled and sometimes cured by swabbing once or twice a week with 50 per cent solution of silver nitrate, freshly made. This sounds like drastic treatment, but in reality the pain following treatment is much less than if a 25 per cent solution is used. If the surface to be treated is large, the animal should first be anesthetized.

The operative treatment of hemorrhoids or rectal prolapse often results fatally because of the previous debilitated condition of the patient.

### Infected Anal Glands

Sometimes this condition can be corrected by simply emptying the glands by pressure between the thumb and index finger, and afterwards keeping the bowel movements soft with liberal doses of sweet oil. Often, however, it is necessary to open freely the glands with a scalpel and cleanse them out, later cauterizing with a silver nitrate pencil or swabbing with 25 per cent argyrol solution or tincture ferri chloride. A recurrence of the trouble must be expected in many cases.

# RINDERPEST ("PESTE BOVINA") IN BRAZIL[1]

*By* G. A. ROBERTS

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RINDERPEST had not been officially reported in Brazil until the present year, 1921. The origin of the present outbreak herein reported has not been determined. Some believe that it came with the zebu cattle from India that introduced the disease in Belgium on their way to South America, but this has not been proven. The first reports of cases of rinderpest in Brazil occurred at the plant of the Continental Products Company (Wilson & Co.) at Osasco, just outside the city of São Paulo, and the diagnosis of the disease was first made by the author. The infected zone was limited to a radius of a few miles from this point and included the city of São Paulo, a large, modern city of 550,000 inhabitants in the State of São Paulo.

About the first of the present year the Continental Products Company began losing some of their work oxen. These oxen were used about the plant and at night were inclosed in a small pasture near by. As it was not uncommon to lose an animal now and then, no note was made of the first cases, as to which animals succumbed nor as to where they came from. Since it was their practice frequently to introduce new work oxen into service from the cattle pens, the origin of the disease at their plant could not be definitely traced. Up to the present time no case has been reported outside of the infected zone about São Paulo.

Whether or not other cases occurred at the same time, or before those cases occurring at the Continental, we were not able to determine; but shortly after the epizootic broke out at the Continental, oxen which had been used by farmers of the neighborhood in hauling fertilizer from the plant began to die mysteriously, and the farmers themselves suspected that the source of the trouble was at the plant. During this time similar cases had been observed by various veterinarians and had been vari-

[1] Presented at the fifty-eighth annual meeting of the American Veterinary Medical Association, Denver, Colo., September 5-9, 1921.

ously suspected as anthrax and blackleg. Vaccinations against these diseases, however, did not stop the losses.

On the 5th of March I was called in by the Continental Company to see five sick oxen and to consult with their Federal Meat Inspector, Dr. Foschini. Up to this time they had lost about twenty oxen. After observing the symptoms in all five, one was slaughtered for autopsy. By the gross pathological picture and also direct microscopic examination of tissues it was easy to eliminate anthrax and blackleg, but it was difficult to make a positive diagnosis. In my own mind the disease could be either rinderpest or hemorragic septicemia (intestinal form). The former, however, had never been reported in Brazil, and it was difficult to understand how the disease could appear first among work oxen about São Paulo.

Material was collected, therefore, and taken to Dr. W. G. Smillie, of the Institute of Hygiene of the Rockefeller Foundation, for bacteriological examination and small-animal inoculations. A bipolar organism of the pasteurella group was easily isolated from spleen and liver, and guinea-pigs, white rats and rabbits died of a septicemia. Autopsies of these small animals showed a pure culture of bipolar organisms. Differential bacterial cultures on MacConkey's medium and all the various sugar mediums proved the organism to be one of the pasteurella group. Therefore a hemorrhagic septicemia bacterin was made and the remaining six oxen vaccinated.

In the meantime other autopsies had been made. In spite of the bacteriological findings the symptoms of the disease and the gross pathology caused us to entertain grave suspicions of rinderpest. Four of the six vaccinated oxen soon died with typical symptoms of the disease, showing that the vaccination did not bring protection. Only two were left, which later proved to be immune to rinderpest.

The heart's blood of several cattle in various stages of the disease was injected into various small animals, but no disease was produced. In another experiment the heart's blood was cultured and inoculated into small animals, but no bipolar or other apparent organism was isolated. This blood was divided into two portions, one being passed through a Berkefeld filter (N). This material was injected into the jugular of a heifer; the other, unfiltered and apparently sterile blood, was injected

into the jugular of a yearling steer. No signs of illness occurred in the former, but the latter became ill on the third day and died on the eighth (subacute case) with typical lesions of rinderpest. A similar experiment was carried out in goats, with the same results. The goat inoculated with unfiltered blood died with typical symptoms of the disease on the fourteenth day.

A résumé of all the laboratory tests showed that:

1. The heart's blood of the sick animals never contained an organism which could be cultivated by usual means.

2. Pasteurella bacilli were frequently cultured from the spleen and liver of sick animals.

3. Direct microscopic examination of the blood was always negative. Direct microscopic examination of liver and spleen tissue showed Gram-negative bipolar bacilli.

4. Intravenous inoculation of a minute portion of the apparently sterile blood of the sick animals produced typical symptoms of the disease in cattle and goats, but no symptoms in rabbits, guinea-pigs or rats.

These laboratory tests, together with the typical symptoms and characteristic gross pathology, made us absolutely sure of our diagnosis of rinderpest. We ruled out hemorrhagic septicemia as the epizootic, despite positive cultures of pasteurella bacteria obtained from the liver and spleen of the sick animals, because these organisms were never found in the circulating blood. It is interesting to note in this connection that pasteurella bacilli were sometimes found as a secondary invader, but were not the cause of death in the animals.

The disease then became prevalent among the dairy herds about São Paulo and caused serious losses. One interesting observation was made in watching the progress of the disease through a dairy herd of 28 head, mostly Holsteins, including 1 bull, 15 cows, 5 heifers and 7 calves. On the twenty-third day following the death of the first case the last one died, showing a mortality of 100 per cent. They were housed in a barn and an adjoining shed, and had the run of a common barn lot. In order to note the natural progress of the disease no effort was made to isolate nor to contaminate. In other instances, among zebu cattle especially, a few had light attacks and recovered, showing that they were somewhat more resistant to the disease. The disease occurred normally only among cattle, but sheep, goats

and a deer sickened and died from natural infection when confined with sick animals. The period of incubation among cattle by contact was from 3 to 5 days, from inoculations 2 to 4 days, occasionally at longer intervals.

## SYMPTOMS

It is well to state here that, as in many diseases, the symptoms and lesions are both subject to marked variation, and therefore some are present in some cases and modified or entirely absent in others.

The disease is largely characterized by an affection of the mucous membrane, particularly of the alimentary tract. After the required period of incubation, the first abnormality to be noted was a rise of temperature, which gradually ascended, with slight irregularities, for a period of two to four days, and reached in some very acute cases 107.5, but more commonly registered between 105.5 and 106.5. The temperature then began to descend rather rapidly until it became subnormal, which required from one to three days, and the animal soon died. With the elevation of temperature there was likewise more or less acceleration of pulse and respiration. In some cases also the respirations were further modified by more or less dyspnea, especially in the latter stages, accompanied by grunting or groaning with each expiration. In many cases a slight cough was noted. In about one-half of the cases when a point near the acme of temperature was reached there was noted some lacrimation and some discharge from the nostrils. In a somewhat larger per cent of cases there was noted more or less salivation, but not so profuse as in foot-and-mouth disease. Examination of the mucous membrane of the eyes at this time would usually show marked redness and congestion of the conjunctiva. A similar condition of the mucous membrane of the nose also was sometimes noted. Likewise, at the same time, or slightly previous, the mucous membrane of the mouth assumed alterations. These alterations were quite variable. In many cases there developed on the lips, cheeks, palate and under surface of free end of tongue, small, usually scattered, but occasionally confluent patches, few or many. They appeared usually as finely granular, fibrinous, slightly elevated patches of a yellowish gray color, some of which became removed, leaving small

erosions, lacerations or ulcers. In other instances the entire mucous membrane of the mouth and tongue became covered or replaced with a soft, mushy, necrotic coating—a generalized stomatitis.

It was remarkable in many cases how much altered the mucous membrane became and yet the animal continued to eat. For a day or two before death, however, there was a complete loss of appetite and rumination. Often at this stage there was frequent gritting of the teeth. Throughout the course of the disease marked thirst was manifested.

Among the most characteristic symptoms was the diarrhea, which usually set in about the second or third day after the temperature began to rise. In nearly all cases this was the first sign of trouble noted by the owner or attendant, though in some cases death occurred without such manifestation. It began with a softening of the feces, which later became quite fluid and were often involuntarily ejected. The color was usually of a greenish yellow and in the majority of cases streaked with clots of blood. With this condition present the odor of the feces was usually very offensive. Examinations of mucous membrane of vulva often showed redness and at times a mucopurulent discharge.

As the disease progressed there was increasing dullness, manifested by lowered head, drooping ears, more or less closed eyes and prostrate condition. Shivering or trembling of muscular groups was often noted. In lactating animals there was a rapid decrease in milk secretion, and in subacute cases marked loss of flesh. The reason that some persons mistook the disease for blackleg was that there was a subcutaneous emphysematous swelling in a limited portion of the cases, occurring along the back at any point from the withers to the croup. This was undoubtedly due to rupture of emphysemic air vesicles of the lungs, as it was found only in cases where marked emphysema of the lungs occurred.

Many animals were autopsied with a fetus contained in the uterus, but very few abortions were seen or reported. The course of the disease varied from five to eight or nine days, but, as in many cases the disease was not suspected until diarrhea set in, death often occurred from three to four days after the first symptoms were noted by the owner.

## LESIONS

Lesions, like symptoms, are subject to great variations, but, as would be expected in a typhus-like affection, the most characteristic lesions are to be found in the mucous membranes of the alimentary tract. The esophagus and first three compartments of the stomach rarely showed anything of significance, but the mucous membranes of the mouth, pharynx, fourth stomach, small and large intestines and rectum usually had well-marked alterations.

The lesions of the mouth have been described under symptoms. Some animals died, however, with very slight or no evident lesions of the mouth. In some cases the mucous membrane of lips showed only small, dirty, yellowish spots. The lesions of pharynx were less common than of the mouth, but when present were similar to those found in the mouth.

The mucous membrane of the fourth stomach showed the most constant and conspicuous alterations. These consisted in many cases of a very deep, diffuse reddening of the whole membrane, which was more or less tumefied. In other cases the deep congestion was limited to areas particularly about the pylorus. In other cases the injected areas were in the form of streaks half an inch wide by 2 to 6 inches long. The color in some cases was an ashen grey. In many cases the involved areas contained hemorrhages varying in size and were usually more or less scattered. Not infrequently erosions were observed, and at times distinct ulcers or necrotic centers.

The small intestines were likewise the seat of grave lesions. Here the whole intestine was sometimes involved, but more often it was confined to sections. Even the outside of intestines often showed a deep reddening with injection of the accompanying blood vessels. The mucous membrane within these areas also would be found deeply reddened, but hemorrhages and erosions were less frequently found than in the stomach and large intestines. Some tumefaction of the mucous membrane and of Peyer's patches were frequently observed. The mucous membrane of large intestines, particularly near the cecum and including it, showed areas of various sizes deeply reddened, within which were often observed scattered hemorrhages and at times caseous covered ulcers. The entire mucous membrane of the cecum was at times reddened. The rectum commonly showed a varying number of hemorrhagic spots or streaks only. The

mesenteric blood vessels were frequently engorged, and at times some subserous edema was present, but rarely were there any hemorrhagic spots on serous membrane. The great omentum, however, showed at times loose, scattered, reddened, fibrinous deposits on it. The mesenteric lymph glands were usually very succulent and at times slightly congested. The mucous membrane of the vulva and vagina were often deeply injected and at times presented hemorrhagic spots and erosions or necrotic ulcers. The urinary bladder invariably contained clear urine, the mucous membrane often showed petechial hemorrhages in limited number. The submucous blood vessels were sometimes visibly injected. The kidneys were commonly somewhat congested, the Malpighian bodies being visible as pin-point red specks. The bases of the papillæ of the medulla were likewise much reddened and congested, with light centers and apices.

The spleen seldom showed lesions, but at times was slightly enlarged and softened or showed a few hemorrhagic spots under the capsule. The liver was often more or less congested and friable. In a fairly large proportion of cases quite large hemorrhagic spots were visible under the capsule, which extended some distance into the liver structure. The gall bladder was invariably engorged with a limpid, dark, yellowish green bile. The mucous membrane was often studded with yellow granular appearing submucous areas, the size of pinheads. In only a few cases was there perceptible excess of peritoneal and pleural fluids.

The nutrient blood vessels of the heart were often deeply injected, and at times there were hemorrhages under the epicardium and more rarely under the endocardium. The heart muscle was usually more or less flabby. In many cases the lungs showed nothing or at most there was a hypostatic congestion. In perhaps 20 per cent of the cases, however, there was a slight or at times exceedingly well-marked interstitial emphysema. Occasionally there was observed some edema about the base of the heart and in the lungs.

As stated under symptoms, the conjuctiva was in nearly all cases deeply reddened in its entirety or limited to an area near the inner canthus on the lower eyelid. The mucous membrane of the nasal cavities was in many cases greatly inflamed, the surface often presenting an ashen gray color. The mucous mem-

branes of the larynx and trachea occasionally presented ecchymotic areas.

### CONTROL

On or about April 1 the State Government of São Paulo and the Federal Government adopted measures for the control of the disease and its possible extermination from the country. As above stated, the disease was known to exist only within a radius of 50 miles, largely to the west of the city of São Paulo.

The plan of action decided upon in the beginning was to notify the officials of all the municipalities (counties) of the State of the existence of rinderpest, and to advise temporary restriction of the movement of all cattle, sheep, goats and swine until the limits of the infected zone could be determined. The zone having been determined, a rigid quarantine line was placed about it. A second quarantine line, some five miles outside the first, was then established, and the territory within was called the suspected zone. The Federal Government also prohibited all movement of cattle into or out of the State of São Paulo. With the restriction of the movement of cattle upon the highways the disease in the country district soon became self-limited, but near the city, where many dairy cows subsisted largely by grazing over unfenced grounds, it was necessary to employ rigorous measures to exterminate the disease.

The State Government offered an indemnity of 200 milreis (about $50) a head for animals sacrificed, and 100 milreis for each animal which succumbed to the disease.

Inspectors made frequent visits to the different dairy herds, noting conditions and giving information as to modes of spread of the disease and taking temperatures. Upon positive evidence of first case in herd, the owner was advised to have all slaughtered at once. If he refused, his premises were placed in complete quarantine and he received only 100 milreis indemnity for each animal. Some inspectors insisted upon the killing also of buzzards, pigeons, chickens, dogs and cats. Nearly every one accepted the advice when given, and it was a sad sight to see the poor owners part with apparently healthy animals which had cost them four or five times as much as the indemnity *promised*.

It may be noted here that on autopsies of these sacrificed animals a large per cent were found to be tuberculous, but fortunately no one thinks of using unboiled milk in this country.

Within the quarantined area there were some 30,000 head of cattle, of which approximately 600 died of rinderpest and some 1,000 were sacrificed. All dead and sacrificed animals were buried deeply and covered with lime. The premises were then cleaned up, disinfected and whitewashed.

A limited amount of antirinderpest serum has been prepared by the writer and others to be used in case the disease should not be controlled by the quarantine and slaughter methods.

The last official report of a case of rinderpest was made on May 23, and it is hoped that the disease has been completely exterminated from the country. All restrictions on the transit of animals were removed by the Government on August 26, 1921.

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## ACCEPTABLE ROQUEFORT CHEESE MADE FROM COWS' MILK

Almost the entire world's supply of Roquefort cheese comes from Aveyron, a department or county in southern France. It is made principally of sheep's milk, and ripened in caves. The steady demand in this country for the green-mold varieties of cheese, especially Roquefort, has led specialists in the Department of Agriculture to experiment with the commercial manufacture of a domestic Roquefort cheese. As it would be impossible to obtain a sufficient supply of suitable sheeps' milk, cows' milk has been used. The chief effect is to give the cheese a slightly yellower color. The temperature, humidity, and peculiar ventilation of the Roquefort caves which are favorable to mold growth and proper ripening of the cheese, have been approximated at Grove City, Pa., in special curing rooms. Considerable cows' milk Roquefort cheese of good quality has been produced and marketed from this experimental plant.

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The American milk cows which have been distributed through Bavaria are declared to be better milkers than the German breed. The Bavarian farmers expressed astonishment that the American cows give about 20 quarts of milk daily after their first calves, which is double the quantity of German cows. —*Kansas City Star.*

# NOTES ON THE CONTROL OF BOVINE TUBERCULOSIS

*By* J. TRAUM *and* S. LOCKETT [1]

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IN THE CONTROL of bovine tuberculosis we should always bear in mind the self-evident fact that all our efforts should be directed toward providing for the uninfected cattle an environment free from tuberculous cattle and from materials made infective by the latter. Our procedures and recommendations in obtaining this end naturally differ to a varied extent, depending principally on the percentage and number of reacting animals in the herd and upon facilities and equipment at our disposal.

In February, 1921, we were called upon to recommend a mode of procedure in establishing a tuberculosis-free herd from one which proved to be (as shown below) badly infected with tuberculosis. The herd, as a whole, had never been previously tested. We applied the intradermal tuberculin test and made recommendations. The observations on time of appearance of the reaction and the recommendations are not new, but are given here to add to and emphasize those previously made.

## I—TIME OF APPEARANCE OF LOCAL REACTION IN INTRADERMAL TUBERCULIN TEST

The question of the best time to make readings of the intradermal test has received much consideration at this Station and by others interested in the work. In a test performed on the badly tuberculous herd mentioned above the following observations were made bearing on this point:

In interpreting the results the standards contained in the report of the committee appointed by the Chairman of the Tuberculosis Conference[2] were adhered to, *i. e.:* Any circumscribed swelling the size of a pea (three-sixteenths of an inch in diameter) or larger, or a diffuse swelling, giving the inoculated fold a thickness of two or more times the thickness of the uninoculated fold, was considered a definite reactor. Any appreci-

[1] S. Lockett temporarily stationed in California; now with University of Nevada.
[2] Proceedings twenty-fourth annual meeting, U. S. Live Stock Sanitary Association, 1920, pp. 67, 68.

able thickening less than above was classified as indefinite or suspicious.

In all, 670 cattle were tested. For convenience of the reader they are grouped as follows:

Group I, 441 cattle (230 adults in lactation and 211 bred heifers) showed 299 reactors. Of these, 295 definite reactions were established during the first 96 hours; 4, not until the one hundred and twentieth hour observation. Of the 295 head, 8 were examined at the forty-eighth hour only. Of the other 287 reactors inspected at the forty-eighth and ninety-sixth hours, 113 were recorded negative at the forty-eighth, and 48 showed indefinite reactions at that period; thus at the forty-eighth hour 161 had not yet developed a decisive reaction. Five of these 287 reactors, showing a positive reaction at the forty-eighth hour, failed to show a decisive reaction at the ninety-sixth hour.

Group II—Eighty-five adult milking cows, with one exception, were examined at the end of the seventy-second hour and again at the ninety-sixth hour, and, as result, 58 definite reactors were found. Of the 58, 6 were indefinite at 72 hours and 2 at 96 hours. None of the 58 were altogether negative at either seventy-second or ninety-sixth hours.

Group III, consisting of 88 head (71 examined at the seventy-second and one hundred and twentieth hours, 17 at the seventy-second hour only), showed 67 reactors, all of which exhibited definite reactions at the seventy-second hour. One reaction receded from 3x at the seventy-second hour to 1½x at the one hundred and twentieth hour.

Group IV, 30 head of 5-months-old cattle, examined at forty-eighth and ninety-sixth hours, yielded 24 reactions, which were very pronounced at both 48 and 96 hours.

Group V.—A test performed on 26 milk-fed calves, 2 to 3 months of age, with readings at seventy-second and one hundred and twentieth hours, showed 5 reactors. At seventy-two hours all 5 were definite; at 120 hours 2 were still definite, 2 were indefinite and 1 was negative.

Two different batches of tuberculin were used in the above test. As a practical field check, tuberculin of the same serial numbers was later used in testing 645 cattle in four certified dairies. This test yielded 636 nonreactors, 7 reactors, 2 indefinite.

Dr. G. K. Cooke, of Berkeley, furnishes us the following information bearing on this phase of intradermal tuberculin test:

In May, 1921, he performed a test upon a herd of 331 adult cows never before tested. Readings were made at 60 and 96 hours respectively. (It was originally planned to make the second reading at the one hundred and twentieth hour.) Two hundred and thirty-seven animals were classed as reactors. Of this number, 58 were indefinite and 38 negative at the sixtieth hour obesrvation. Eight animals, indefinite at the sixtieth hour, were definitely negative at the ninety-sixth hour, and 141 were positive at both sixtieth and ninety-sixth hour readings.

These observations emphasize what has been pointed out by this Station[1] and the California State Department of Agriculture, namely, that a large percentage of adult cows will fail to react at the forty-eighth hour, but may react later, and that some few do not react until the one hundred and twentieth hour. The percentage of late reactors is not constant; in some herds it is small, while in others it is considerable. In the young animals the reactions were all definite at the first reading.

The above and other findings further indicate that two readings should be made for the best results, the first between the forty-eighth and seventy-second hours and the second at the one hundred and twentieth hour. When one reading alone is possible, the results suggest that it be made either at the seventy-second or ninety-sixth hour. In official testing by the California State Department of Agriculture the ninety-sixth hour reading is preferred.

## II—RECOMMENDATIONS

This Station [2] [3] has gone on record repeatedly as not being in favor of indiscriminate slaughter of reacting animals. Slaughter of reacting animals seems to be justified principally in herds, areas and States where the percentage of reactors is low and where the reacting animals can not be otherwise disposed of properly and safely.

The data given above show 70 per cent reactors, and we advised the Superintendent:

[1] Report of the College of Agriculture and Agricultural Experiment Station, University of California, year ending June 30, 1919, pp. 82, 83.
[2] Report of College of Agriculture and Agricultural Experiment Station, University of California, year ending June 30, 1920, p. 77.
[3] C. M. Haring. Bovine Tuberculosis. Circular 155, Agricultural Experiment Station, University of California.

(*a*) The statistics of tuberculin tests indicate that no single method of test can be depended upon to discover more than about 90 per cent of the tuberculous animals in an extensively infected herd such as the one under consideration. Therefore it would be nearer an accurate statement of the tuberculosis condition in the entire herd (excluding the subsidiary test on the 26 milk-fed calves) to say that about 80 per cent of the herd is tuberculosis-infected.

The high percentage of reactors among the younger animals suggests very strongly the source of infection to be in the milk upon which they have been reared, as was suspected.

Although there is some variation in the percentage of reactors in the other groups, in no group is there a low percentage of reactors. Everything indicates a general and widespread infection of the entire herd. On the evidence of the test it is certain that the barns, corrals and fields grazed by such a herd must be grossly infected and therefore absolutely unsafe for healthy animals.

(*b*) We are of the opinion that the safest method of establishing a free herd from the cattle at present on the premises is to regard, for practical purposes, the whole herd as infected and begin with the newly-born calves.

(*c*) They should be removed, as soon as possible after being dropped, to an environment entirely free from any possible chance of contamination by the old herd.

(*d*) Such calves should not even be permitted to suck the colostrum, but instead should be given a 2 to 3 quart salt solution enema. They should be fed either milk heated to pasteurization or higher temperature, or milk from nurse cows that are without question free from tuberculosis (such cows can only be obtained from a 100 per cent clean herd).

(*e*) These calves should be tested at between 4 and 6 months of age and again tested before breeding. Any reactors or questionable animals should be, of course, eliminated from this herd and autopsies performed upon them.

(*f*) We consider it an almost impossible task to clean up the old herd by the Bang or any other system; and, whatever be done with the nonreactors, we insist that the calves that are reared under segregation as a nucleus for the new herd do not

in any way come in contact with any portion of the present herd at any time during its entire existence.

(*g*) In brief, it would be necessary to have a calf barn and pastures which would be entirely separate from the old herd and be cared for by individuals that have absolutely no association or dealings with the original herd. In view of the fact that the artificial rearing of calves is more or less of a difficult undertaking, we would strongly advise the choice of a site for locating the calf establishment to comprise good drainage, plenty of pasture, freedom and sunny exposure, with protection against wind and inclement weather. (This was very carefully done.)

(*h*) The carrying out of these recommendations would further entail the establishment of sanitary and easily cleaned maternity sheds and pens, with systematic attention to clean-up methods after the use of such cow compartments.

It is self-evident that, in order to carry out efficiently the above recommendations, it would be necessary to have an intelligent and reliable man detailed or charged with keeping tab on the dates that cows are due to calve. Cows should be put in these maternity corrals about a week before calving. As stated above, the calves should be removed as soon as possible after being dried (not licked and dried by the mother, but dried by an attendant) and promptly transported to the segregation location.

These, in substance, are the main features of making a start toward the establishment of a tuberculosis-free herd from the existing herd.

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Dr. M. J. Harkins, who for a number of years was on the veterinary scientific staff of the H. K. Mulford Co., Glenolden, Pa., has resigned to accept charge of the breeding farms of Mr. Willis Sharpe Kilmer, with headquarters at Remlik Hall, Remlik, Va. Mr. Kilmer, though devoting himself primarily to the Thoroughbred horse, is very active in breeding Jersey and Aberdeen Angus cattle and Duroc-Jersey hogs.

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Dr. L. A. White, who has been located at Turtle Creek, Wis., has moved to Parkersburg, Iowa, where he will continue the practice of his profession.

# OBSCURE LESIONS IN TUBERCULOSIS [1]

*By* C. C. CONLEY

*U. S. Bureau of Animal Industry, Burlington, Vermont*

THE subject of postmortem inspection of reactor cattle is of peculiar interest to a conference engaged in discussing progress in the control and eradication of tuberculosis. Without doubt it is seldom that veterinarians applying the various tuberculin tests do not anxiously await the abattoir report on findings, and it is but fair to say that the men assigned to postmortem inspection are fully aware of the cooperative part they are taking in this work when called upon to vertify, if possible, through thorough inspection, the results obtained by men in the field. With this in mind, therefore, one can easily understand the seriousness with which the postmortem inspector approaches his work and how reluctantly he reports "no lesions" following a thorough examination of viscera and carcass.

In the routine work of inspection there arises at times evidence to prove that tuberculosis in its macroscopic appearance undergoes changes differing from the form usually presented to the inspector; in fact, there are many times when the aid of the laboratory is deemed advisable in reaching a diagnosis. I have in mind an animal which had reacted and upon postmortem showed in addition to the usual visceral lesions large and small tumors in all the muscles of the carcass. These tumors when incised revealed nothing characteristic of tuberculosis, yet upon laboratory examination were pronounced tuberculous growths. The parasitic invasion of lymph glands will sometimes cause a condition simulating tuberculosis, but the characteristics of tuberculosis being lacking, one can usually differentiate without fear of mistake.

In the examination of enlarged joints in cattle it appears that mistakes in diagnosing this condition as tuberculosis have been made, as material from joints clinically pronounced tuberculous have often been forwarded to the laboratory only to receive a negative report. Mind you, I do not say that tuberculous joints are not found; in fact, we have to report many of them; but

[1] Presented at the conference on tuberculosis eradication, Boston, Mass, June, 1921.

I wish to caution against a positive clinical diagnosis in these cases owing to the many conditions which cause lesions resembling tuberculosis, especially in the region of the femoro-tibial joint.

Inflammation of serous membranes will many times cause a condition resembling tuberculosis, while acute lesions of the proliferative type will, through error, be dismissed as of no consequence; hence the need of great care in considering these cases.

In the examination of reactors it is interesting to note the various locations of primary lesions. For example, a renal lymph gland, an iliac, a popliteal, an ischial, a precrural, prescapular hemo-lymph gland draining a hide lesion, the glands of the head and cervical region, the posterior mediastinal between the caudal lobes of lung, the inguinal glands of bulls and mammary lymph draining the udder with ofttimes evidence present in structure of udder; those mesenteric glands adjacent the ileocecal valve; also various bone structures, especially the dorsal region of the vertebral column. In the selection of specimen tissues for laboratory examination in those cases in which no visible lesions are it is well to include those glands of the mesenteric chain adjacent the ileocecal valve, regardless of whether suspicion is directed toward them, also any lymph glands showing enlargement and swelling with either unusual content of fluid or a hyperemic condition bordering on a plum red.

From laboratory data it is evident that with the aid of the microscope confirmation of reactions may be obtained in cases where macroscopic evidence was lacking.

A condition of fat necrosis is found in cavities of the body, also necrosis of the bones, both of which must be differentiated from tuberculosis. Another example is lime deposits in the region of the sternum and the ilium, which upon section reminds one of dried cream-colored paint.

Much can be written about the prevalence of hide lesions, though they appear to be restricted, geographically, to those States north of Virginia and are especially found in the States bordering the Canadian line. These lesions often present the characteristics of visceral lesions and are usually found at points where injuries have been received followed by manure infection, the fore and hind legs being favorable sites. On the hind legs the infection can often be traced to the small lymph nodes

leading to the popliteal gland and its course followed into the large lymph system, but in many cases hide lesions are restricted to the inner side of hide and fascia and appear not to involve the muscle proper, while in other cases the muscle is unmistakably infected, the evidence pointing to a strictly local lesion.

Attention is invited to the fact that not all lesions of the hide are verified by the laboratory as tuberculosis, there being a condition caused by pyemic infection which undergoes the same degenerative process, revealing upon incision inspissated pus and calcification. These various lesions of the hide bear such a striking resemblance that I consider it wise to make a conditional diagnosis and ask of the laboratory a confirmatory report.

The results attending the examination of reactors must be judged by the time the inspector can give to the work, and the importance attached to this work is evidenced by the unusual preparations being made to handle reactor cattle. Thus in many of the abattoirs of the country two or more men are assigned the task of further inspecting those cases which in the ordinary routine revealed no lesions. This supplementary inspection is many times rewarded through the finding of a lesion in some obscure part of the carcass, and proves an incentive for the inspector to bend every effort toward verifying the results obtained by the field men in the intensive campaign now being waged against bovine tuberculosis.

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## INCREASE IN TUBERCULOSIS-FREE HERDS

Latest report of the tuberculosis-eradication work by the United States Department of Agriculture shows that a total of 204,892 head of cattle in 8,839 herds have been accredited by the Government as free of tuberculosis infection, while 702,590 additional cattle in 56,113 herds have already been once tested and found free of the disease. On August 1, 1921, a total of 1,294,159 cattle in 79,341 herds were under supervision in the tuberculosis-eradication campaign. Furthermore, there were 218,531 cattle in 14,494 herds on the waiting list for testing. There is a constant increase in the number of animals and herds tested and accredited and in the demands on the part of herd owners who desire to place their cattle under Federal and State supervision.

# THE VETERINARIAN AND PUREBRED LIVESTOCK

*By* GEORGE H. CARR

*Brighton, Colorado*

THE VALUE of purebred livestock has been attracting more and more attention during the past few years. Practitioners ten years ago considered it folly and a waste of time to advocate the raising of purebred livestock, but we are constantly being forced to meet new problems, among which are the limiting of the ranges and the displacement of horses with motor power. It is only a matter of time until the ranges will be divided up into comparatively small ranches, and the man who formerly owned thousands of inferior cattle or horses must raise smaller numbers and better quality. The tractor and the truck will continue to replace some of our horses, and we can see that the number of possible patients will not be as great as formerly.

This presents a problem to the practitioner which can be very satisfactorily met if his clients will breed better animals. When a stockman raises purebred animals the value of the possible patients is increased.

Under the present conditions it becomes necessary for the veterinarian to increase his scope of usefulness to the public. He must be as well informed as possible on all problems of the breeder and owner of livestock, including advice especially as to the best methods of breeding to pursue. The practitioner should be informed as to the possibilities in all popular breeds of livestock, then should carry on a live-wire campaign to establish as many herds of purebred animals as he can. This the veterinarian has an excellent opportunity of doing. No one has a better understanding of the value of a purebred sire in a grade herd than the practitioner, and he should be equally able to recognize the value of registered animals.

The veterinarian owes it to his clients to be able to advise them what blood lines are of the greatest value, and this can not be done unless he possesses a thorough knowledge of pedigrees. It is a common occurrence for the breeder to seek someone who knows pedigrees when contemplating the purchase of foundation breeding stock.

Many stockmen believe that one registered animal is the same as any other of the same breed. This is not the case. We have a client who owned what he was pleased to call "the best-bred bull in the State," and the price he paid would lend some support to the claim. An explanation of his pedigree to the owner convinced him that the individual was of very mediocre breeding. Upon our advice and with some constructive criticism he was persuaded to dispose of the bull and employed us to assist him in buying a high record bull to head his really good herd of registered cattle. That was a profitable and pleasant service and one that was much appreciated by the client. In cases like this the breeder does not want half-baked opinions, but wants to know scientific breeding facts, and it pays both client and veterinarian if this service is available.

Every pedigree is different and establishes to some extent the value of the animal. A well-intentioned breeder in our community has a cow which is his favorite because of the fact that the name Tilly Alcartra, the world's greatest long-time milk producer, is mentioned in her pedigree. We also have a client who has what he calls "the best-bred Percheron stallion in the State." Asked his reason for so thinking, he points with pride to the fact that the name of that great foundation horse, Brilliant, is mentioned among the ancestors of his horse. As a matter of fact it would be difficult to find a Percheron pedigree without the name of either Brilliant or Coco or both. These clients demonstrate the average understanding of pedigrees, and can be shown that the value of a pedigree on a purebred animal is in proportion to the proximity of well-known and high-producing ancestors.

The selection of foundation stock in any line is a very important step and one in which the breeder deserves and needs the advice of someone who is better informed than himself on the merits of the different breeds. It is at this time that the practitioner can exert his influence as an animal expert if he is qualified to do so; and to become qualified means that he must have given a good deal of time and thought to the study of purebred problems.

The breeder who is trying his hand for the first time raising registered stock should be advised not to buy a large herd to begin with, because he most certainly will not be able to buy a knowledge of scientific breeding with his herd. The prac-

titioner can see that the purebred business is one involving many risks, especially to a beginner who is short on capital and knowledge of breeding. Inasmuch as a loss to the client means a loss to the veterinarian, overstocking and injudicious buying should be carefully guarded against. These problems necessitate ability and diplomacy on the part of the practitioner and represent a distinct service to the client.

One of our most successful breeders started eight years ago with one registered cow and her calf. He has increased the number in his herd as knowledge of the business was gained, and today is one of our most substantial and enthusiastic advocates of purebreds. He buys nothing without first having it passed upon by his veterinarian, including a contract permitting a sixty-day retest.

There is no phase of veterinary practice in which the returns are gauged so closely by the quality of service given as by the purebred business. Knowing that his returns depend almost entirely upon the service given, the veterinarian should be a purebred expert. He must know the location of registry offices, the procedure of registration of animals and the cost of this service. This work is usually left to the county agent, but a veterinarian's clients should not be forced to underrate him as a livestock expert. It has been our pleasant duty to obtain registration papers on over 100 purebred horses and cattle during the past year and to be called upon to assist in a number of purebred sales. The breeder values and appreciates such service and is willing to pay the same fee or more for service of this nature than for an ordinary call. It certainly is a pleasure to make a call when the results of the service are known. There is no patient to be lost nor long-drawn-out course of treatment to be undertaken.

In our section we can be of most value along these lines by placing purebred sires in grade herds. The veterinarian who applies himself diligently to the matter can be the best informed man in his territory as to the location, ownership and breeding of desirable sires and the price asked. If conscientious in the matter and reputed as knowing purebreds and pedigrees, his recommendations to the prospective buyer carry great weight.

Our greatest help and best friend in placing purebred livestock, especially purebred sires, among our clients is the county

agent. Here let me deviate long enough to say that our county agent is performing a very valuable service along these lines. He appreciates cooperation and advice and is ready at any time to make a trip to the farm of an interested client to urge him to purchase a registered sire or other purebred livestock. I believe that this demonstrates, in a way, that the county agent is an asset to any agricultural community, and that the practitioner has been a little hasty in always assuming that the county agent is his enemy. The county agent has come to stay; his services are of value, and he functions much better as an interested friend than as an antagonist.

It has been our pleasure and privilege to assist at various farm bureau and livestock meetings in advocating the improvement of breeding methods, and I believe that at no time has the stockman been more eager and willing to accept proven methods than at present. This type of service is somewhat unusual for a practitioner, but it certainly is ethical and of value to all concerned.

Along this line the veterinarian can perform a distinct service to his community by assisting in the organization of purebred clubs, especially calf and pig clubs for the boys and girls. Enthusiasm for purebred cows is rivaled only by that shown for purebred pigs by the members of our boys' and girls' clubs. We can already see that the boy or girl with one registered calf or pig today will be the purebred breeder and good client of tomorrow. They take a keen interest in the particular breed of which they own one individual, and naturally they have many questions regarding type, feeding, care and management which the practitioner can be easily in a position to answer. These boys and girls are starting with only one or two individuals and are increasing the number as knowledge of their problems are gained; therefore we expect them to become the future well-informed, scientific purebred owners and clients. With their questions they are willing to go to the practitioner if they feel that he is vitally interested in their future success and able to give them sound advice.

Another method of stimulating the purebred business and eventually the practitioner's business is the showing of worthy animals at the various fairs. There is no greater incentive toward the desire for better animals than competitive showing at these fairs. The pride that comes from the ownership of a

winning animal is infectious and spreads in a community. Most owners of one or two purebred animals hesitate to show them because they are not familiar with methods of conditioning for show purposes and rules of entry. Going from one farm to another, and knowing the desired types, the veterinarian can greatly increase the number of animals shown by constantly advocating better breeding methods and informing the client how best to fit his animals, and by selecting worthy livestock to be shown. This service does not make a direct daily return to the veterinarian, but it certainly builds a good foundation for satisfactory future business. We have, as a class, been expecting too great immediate returns and have just begun to realize that upon the welfare of the livestock owner depends the future of our profession.

Too many of our purebred owners are committing the error of registering every purebred animal regardless of conformation to type or suitability as a breeding individual. This is a poor business policy and one which in a short time will cost the purebred livestock breeder more than he can possibly realize on the sale of such animals, for nothing so reacts upon a breeder as the sale of an unworthy individual. The veterinarian can do a great deal toward eliminating undesirable breeding animals. Castration of scrub purebreds should be just as closely practiced as the castration of grade animals, and the practitioner need not hesitate in recommending such measures. He will be doing the individual owner and the purebred industry a favor by seeing to it that there is only a survival of the fittest.

These are some of the ways in which the veterinarian can be of greater service to his clients, especially to those who own registered stock. It is a source of great satisfaction to have a good percentage of clients who are owners of purebred animals. Veterinary service is much more promptly and intelligently used. On purebred patients we do not experience so great a difficulty in obtaining some consideration and care as we do in grade animals. The owner of a fifty-dollar animal hesitates a long time before calling the veterinarian, while the man whose three-hundred-dollar registered animal is sick usually seeks the best veterinary service available, and at once.

This has quite a tendency toward making better veterinarians by eliminating those who do not keep abreast of the times and consequently can not give high-class service on valuable ani-

mals. The time of the "old farmer" has passed, and in his stead we have the agricultural business man who knows, appreciates and is willing to pay for good service.

There is certainly a greater stimulus toward the making of better veterinarians by linking the interests of the practitioner with the interests of the owner of purebred livestock. The veterinary profession is a young profession and has progressed only so fast as the value of animals has increased. Therefore let us have a concerted effort on the part of the veterinarians to place more and better purebred livestock on our farms.

## DISCUSSION

DR. O. E. TROY (Raton, N. Mex.): I wish to second Dr. Carr's sentiment regarding cooperation with the county agent. My experience has not always been the best with the county agent. I think we should solicit their cooperation and cooperate with them, instead of working in the opposite method.

DR. KINSLEY: The Doctor should be complimented on presenting such a paper as this to a group of practitioners. The practitioner can not afford to overlook the advantages of the purebred animal. Those men that are in the communities in which the purebred animals predominate we find are the thrifty veterinarians of today. The veterinarian, the practitioner, is dependent upon the livestock industry. The livestock industry, however, is the basic principle in itself. Your function is to further the benefits of the industry, and you can do this better in a community in which the animals are purebred. They are much more valuable to the owner. They are much more serviceable to our community, to our State, and to our country, than are the scrubs. Nearly all the veterinarians are advocating purebred animals, but I fear a great many of the practitioners are not making careful study of the advantages and the individuals of the breeds. I fear that is one of the weak points, particularly of our older practitioners. The younger men have had the privilege that the older men did not have in college of obtaining courses in this subject. I should like to see a lively discussion on this topic.

DR. JAFFRAY: I want to draw attention to one little point the Doctor brought out there, about the pedigree of an animal. I was called down here a little while ago by an attorney in Chicago who was sued for $10,000 for a valuable sire which was supposed to be one of the finest around that point, and he wanted to know where he could get judges as to the value of that animal. It appears he had a copy of his pedigree, and he claimed he paid $10,000 for him. I said, "Have they backed that up with anything?" He said, "What do you mean?" I said, "What has this sire done? What can he show?" He said, "That is a good idea." They defeated the law suit with that one point. They couldn't show that that sire had followed up with the ancestors. There was just one law suit of $10,000 decided because they couldn't back up what the animal did.

CHAIRMAN FERGUSON: There are a lot of good points in this paper. I am interested in that particular point that the Doctor just mentioned. I think that it is just as important to eliminate purebred scrub as it is the grade and the scrub. There are plenty of purebred scrubs, and the purebred industry has been handicapped largely by dealers. The purebred man has let the dealer run his business to a great extent, and it has hurt him. The time has come right now when that part of it must be eliminated.

## DISCUSSION OF PAPER ON PARTURIENT PARESIS[1]

DR. C. C. STEWART (Colorado Springs): I didn't get to hear the first part of this paper, but I noticed an article in THE JOURNAL some months ago, by one of the members, who seemed to consider that he had a very unusual case, it having occurred seven days after parturition, and I suppose it has been the experience of most of the men that it might occur then or later. I have had particular cases occur four weeks, and one six weeks after parturition, and if there is anybody who hasn't experienced that, it might be well to keep it in mind, because I found that it will occur that long after parturition. From the article in THE JOURNAL it seems as though that particular writer was very much surprised and doubted his diagnosis somewhat for a time because it occurred seven days after calving. I don't know what the general experience has been, but I had a case several weeks ago, in a Jersey cow, four weeks to the day after calving, and it was a typical case in every way and responded to the treatment.

DR. G. H. HUTHMAN (Portland, Oregon): We find that camphor and oil is better than strychnin. We use 30 c.c.

DR. J. B. PATERSON: In the line of treatment that this gentleman has used, it seems as though he advised not earlier than four hours. In a number of cases that I have had there have been return attacks after six hours, and in one case especially a calf had been allowed to suck early in the evening and the cow was decumbent. In two or three hours we had her on her feet, but some time in the night the calf got with the cow again, and the next morning she was down. During the day we got her up and in twelve hours she gave a gallon of milk. We had another case where the cow was milked regularly, and every few hours she was inflated.

CHAIRMAN FERGUSON: That is a good point to bring out—that relieving of the udder after the treatment is applied in relapsed cases is good. That very frequently happens, and the way I handle them in practice is to repeat the gauze. We don't ligate the teats. We take a little rubber band and tie it over the teat, with instructions to the owner to remove it a little later. As a common procedure we don't ligate the teat, but do make a return call on valuable cows, and in those cases have the owner milk them out, and inflate the second time, and feed the milk to the calf if it is thought advisable to feed him. It isn't a good plan to feed the calf too early, and it is better to remove the calf from the cow's stall to another stall so he can't interfere with her udder at all. That is a good point to bring out, because the cow might be reported as up, and the milking of this animal might be recommended, and the owner might lose her. A man with experience wouldn't recommend this, but a young practitioner might. He might forget to have the calf removed, and the calf might remove the milk in the night, and it might cause the loss of the cow.

DR. G. H. CARR (Brighton, Colorado): I have had during the last month two cases in which the patient was extremely susceptible to strychnin. It was strychnin poisoning and it was quite alarming. Is there anything that you would give in those cases to allay those symptoms? I have had one death in the last three years from strychnin poisoning.

SECRETARY MULDOON: I think there were a few things which the

[1] This discussion followed the reading of the paper on "Parturient Paresis," by A. A. Motley, Alpena, Mich., at the fifty-eighth annual meeting of the American Veterinary Medical Association, Denver, Colo., September 5-9, 1921. Dr. Motley's paper appearel in THE JOURNAL for October, 1921, vol. 12 (n. s.), p. 63.

essayist did not bring out; that is, the fact of the temperature. He says it may sometimes be 103. We should not forget that the temperature oftentimes in the beginning of these cases goes to 105 or 106. There is a sharp curve, and then it drops down to subnormal. Then we must not forget that the animal sometimes shows nervous symptoms in the beginning of parturient paresis. We should keep those in mind.

One or two doctors have brought out the matter of strychnin poisoning. Personally, I don't use strychnin. I use cocaine, if I use anything at all, as a stimulant. I like cocaine for things of that nature, and I use cocaine in place of strychnin. In cases of this kind I use 2 to 3 grains. Sometimes I use more than that if I think it is necessary. I like cocaine better than I do strychnin in a case of this kind. Camphorated oil I am not particularly fond of. You are likely to get abscess formation and other things, if you have a dirty syringe. The fact is, you are likely to get abscess formation with camphorated oil, no matter how sterile you feel the injection is.

DR. HUTHMAN: We have tried camphorated oil two years and a half, in every case of milk fever, and we have still the first case of abscess to find, and we disinfect with iodin and lysol, and so on. So far we have had no abscess formation, where we use it subcutaneously. We don't use it intramuscularly. We find we get much better results, and it is perfectly safe. Even as little as a quarter grain of strychnin has had a bad effect on animals, producing toxic effects. In a high-grade Jersey cow we had toxic symptoms from strychnin.

CHAIRMAN FERGUSON: That is very true. I believe it is the experience of all practitioners that the cow is very susceptible at that time to the action of strychnin. If it is used, a small dose is indicated, and I agree with you in that camphorated oil a good many times does not cause the formation of abscess, although, as Dr. Muldoon has said, I have seen a lot of trouble from camphorated oil, for some reason or other; it may be the mixture or preparation or something of that kind. We have been mixing our own and use cottonseed oil and ether, and we have no trouble. We inject that intramuscularly. We don't take any pains in sterilizing the skin. We select some point of skin to go through that is clean. We take a little pledget of cotton and wipe it off with iodin a little while before making the injection, and, of course, a clean syringe is used. The syringe is not boiled every day if we are not using it for something that might contaminate it.

Dr. HUTHMAN: It may be that many use just common camphorated oil, and that may be where they get abscess formation. I have noticed the difference in camphorated oil and camphor and oil. We have had abscess from straight camphorated oil. We get the 30 c.c. ampule, which costs something like 20 cents. We charge that to the owner of the animal. We make a minimum charge of so much for the trip and so much for medicine and a general charge for injection of camphor and oil, 50 cents.

DR. STEWART: I have found that camphor and oil is all right if it is warmed to the temperature of the body. I have had abscess where I used it cold. The oil will naturally retain the cold temperature longer than when we make the solution warm. I have used caffein, sodium, and so on, when the patient was very nervous.

CHAIRMAN FERGUSON: This question of abscess formation after the injection of the agent into a cow is an important one. If we are dealing with high-class cows, we must keep away from abscess as far as possible. It is well to know how to handle camphorated oil, where it is indicated. There is a time when the camphorated oil you buy

is made with neutral oil. Some claim that that isn't so good. I never used any myself. These are all excellent points.

DR. PATERSON: I have had a number of cases of parturient paresis where there was a light-headedness and the cows were weak on their feet and wobbly, and would fall around, and not seem to know anything. In those cases I was just wondering whether I was treating the right disease or symptoms.

CHAIRMAN FERGUSON: I believe you were. That is one of the symptoms. You may be called on to see a cow and she may be a little wobbly on her feet and nervous. If you get a treatment in, it will very often prevent her going down. Quite often it will keep her on her feet. Those cases that come six or eight days after parturition respond to the treatment. Anything you get right near parturition time is right sure to be parturient paresis. Of course you may get toxemia then. Those cases that come some time afterwards are mammary toxemia or toxemia from other causes. In those cases of mammary toxemia you will get good results from the air treatment, and you will find in most of those cases that if it isn't present, if there is not noticeable symptom of it present at the time, a day or so later you will find you have had an insignificant mastitis, but enough to cause toxemia.

DR. HUTHMAN: I want to ask a question that has been called to my attention, about the farmers' own treatment of a case, pumping it up. I have gone on two cases recently where the whole body surface seemed to be inflated with air, and I was wondering if there was any way by the use of the bicycle pump that they tore the skin loose from the udder tissues. Where that took place, my treatment has been the use of camphorated oil and hot applications to the back, and continually massaging the body. In two out of three I got results. One died with pneumonia. I think the bicycle pump gives too much force. Instead of inflating the milk tissue, it tears the skin loose and inflates the tissue all over the body.

DR. D. S. JAFFRAY, JR. (Chicago): Around Chicago we have the box-stall cow, the cow that doesn't get any exercise. We use the treatment a good deal, and we have cases of toxemia just as often as parturient apoplexy. I don't agree with the Doctor in massaging the cow where the air has gone through her body. I think it well to leave that alone. I have had cases where I was called in afterwards, where the air had gone all through the muscles of the back. I never touch that. I use hot applications to the udder. Once I found an infection after the air treatment where a bicycle pump had been used. They had used no precaution to sterilize the pump, and there was infection due to the dirt in the hose. I think there is one point that should be looked into.

DR. GRIZZELL (Kansas): Before entering college I was acting as herdsman for a large dairy firm in the East, and when I first came there we had a number of cases of parturient paresis. We made it a rule there never to milk the cow thoroughly for a week after calving, and we diminished these cases materially. I wondered since whether that did good or not. I have advised a few men to do that and they have. By leaving a portion of the milk in for a week or ten days, it doesn't seem to hurt the udder any and does hold the animal back from being attacked with this disease. I want to take exception to one thing in the paper of Dr. Motley, and that is, that I have treated two cows three years successively, with the history that they were treated one year previous to that, making four years. I would like to know whether anybody has anything to say about leaving some milk in the udder.

DR. HUTHMAN: My experience has been the same. We milk about half of the milk three times a day, instead of all the milk twice a day.

In cases that I have had two years in succession I tried it the third year and had no success. We also give a good dose of physic immediately after calving, say twelve or fourteen hours after calving.

CHAIRMAN FERGUSON: What do you do with a case that you find stretched on the side, almost all in, and bloated? You have to relieve the bloat right away or it will be a case of asphyxiation. Then there is another class of cases, the kind that come down with it before the act of parturition has taken place, or during parturition. There are two good points to bring out.

DR. STEWART: I have found those cases, and the first thing I do is to get the animal on the other side, and before I get it on the sternum I use a little spirits of ammonia on a piece of cotton and hold that in the nostrils. I let them inhale some of the air that is more or less charged with ammonia. It seems to relieve them quicker than anything in the way of hypodermics or anything I have tried.

CHAIRMAN FERGUSON: What do you do with those cases that haven't calved yet, coming during parturition or a little before? How do you handle those?

A MEMBER: How do you handle them?

CHAIRMAN FERGUSON: The way I handle them is this: I give them the treatment before I try to deliver the calf. I give them the air treatment immediately. I get them into the proper position and then go on and deliver the calf. I prefer doing that way rather than to try to deliver the calf first. You have a very inert uterus and air treatment seems to invigorate it, and by giving a treatment and possibly leaving them an hour or so, the parturition is made easier and much safer for the cow.

DR. H. E. KINGMAN (Colorado): Do you find the cervix dilated?

CHAIRMAN FERGUSON: Yes; it is dilated, but inert. There is a lazy uterus. It doesn't affect the uterus, because that is demonstrated many times in the retention of the placenta. The placenta is already in shape to come, but there isn't any vigor, and involution doesn't take place or doesn't start, and the placenta just remains lightly attached. If the cow receives treatment, in a few hours it usually passes away itself. If you apply the treatment before assisting the cow to deliver the calf, you will find it invigorates them. If you go to work on the cow before applying the treatment, you will have trouble.

As to those cases of bloat I might say a word. I am referring to the case that is bloated to such an extent that the animal is almost asphyxiated. Of course we all know about tapping, and tapping will relieve them. If the cow hasn't gone too far, roll her up on her sternum, and she will belch up, but it isn't safe. The nicest way to do is not to disturb the cow at all, but take the stiff stomach tube and guide it down over the epiglottis into the esophagus into the rumen, blow out the clog and let the gas off. A stiff tube will follow down into the rumen and get the gas that is disturbing the animal. It is nearly always dry gas, and it will relieve it in an instant. The bloat will be relieved. Then give the treatment. It is safe to leave the cow on her side until you treat the udder. Roll her on her sternum and you have a good, safe prospect for recovery.

The object in having this paper was to bring out a discussion that would better the treatment, and guard against being a little bit careless in applying one of the best treatments that we have ever had for any disease, the oxygen or Schmidt air treatment. The men in the profession belittle that treatment to the extent that they are a little careless with their equipment. They have a dirty old bicycle pump along, or an outfit that is ridiculous for them to use, and they attempt to make an impression with that. If they will get some sort of equipment that is out of the ordinary, like a water bottle with two tubes in it, and a nice bulb and a nice clean needle,

you can make an impression on the owner that way. His herdsman may be using a dirty old outfit. He wants you to do the work. If you do it in a way that will attract his attention, it will mean a great deal.

As to the hypodermic medication of animals with this disease, of course we all use it, and it is almost always indicated, and we know why. We are going to continue to use it. The impression that your treatment leaves goes a long way toward keeping up this good treatment that this man Schmidt has given us. He is about the only practitioner that gave the profession something that is big. This is big, when you stop to think of the number of valuable cattle that used to die in the earlier days with parturient paresis. You must appreciate that this is a wonderful treatment, and Schmidt is the man that is responsible for it. He started in with the iodid potassium solution first, and then worked up to the air method. If we guard it carefully we will have a fine treatment and we can keep it right in the profession. If we have our outfits in proper shape to make an impression, that is all that is necessary.

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Dr. Chauncey E. Sawyer, of Carlyle, Kans., has been appointed as instructor in pathology at the Veterinary Division of the Kansas State Agricultural College.

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The veterinary extension work of the university of Pennsylvania has been placed under the general supervision of Dr. George A. Dick, Professor of Animal Industry in the Veterinary School. Dr. Dick will have charge of correspondence and other administrative work and the other members of the veterinary faculty will assist him in giving addresses at meetings and in the other instructional work.

Dr. Dick will continue his regular classes in animal industry in the Veterinary School.

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Dr. B. L. Dawson and Dr. F. J. Lingo, of the Federal tuberculosis eradication forces in Florida and Ohio, respectively, have been transferred to similar work in New Mexico.

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Dr. Clement E. Wilmot, formerly engaged in Government work for hog cholera control in Iowa, has been assigned to tuberculosis eradication in Missouri.

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Dr. Paul Vaughn has been placed in charge of the Federal tuberculosis eradication work in North Carolina with headquarters at Raleigh.

## CLINICAL AND CASE REPORTS

(Practitioners and others are invited to contribute to this department reports of unusual and interesting cases which may be helpful to others in the profession.)

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### INDURATED UDDERS IN VIRGIN HEIFERS

*By* E. M. NIGHBERT

*United States Veterinary Inspector, London, England*

IN facilitating exportation of purebred cattle from Great Britain into the United States, on a recent visit to Scotland my attention was called to a disease affecting the udders of young heifers prior to breeding them. The condition was commonly referred to by breeders as "udder clap." I was informed by breeders that treatment was unsuccessful and that affected animals were consigned for slaughter.

*History.*—The disease was reported to be quite common, developing during dry and unusually warm summers, when cattle would bunch in the pastures and seek shade. It appears from the information gained that not more than one to four animals would be attacked during a season on the same farm. The disease always appeared in young unbred heifers or well-developed heifer calves. Also the disease developed so slowly that it often escaped notice until the animal began to lose flesh or failed to keep in good condition under the customary care that the herd was receiving. The disease was reported to have been seen in unbred ewes.

*Symptoms.*—The first symptoms noticed were that one and sometimes two teats would be prominently enlarged and hard to the touch, with acute local inflammation of one and sometimes two quarters of the udder. The disease would slowly progress until the affected parts would become greatly enlarged, giving the appearance of a developed udder in advanced pregnancy in an adult cow. The affected parts would be extremely hard to the touch, generally painless on palpation, except when abscess formation appeared superficially. The general appearance of the animal would show slight unthriftiness, appetite remaining good but development retarded. These are the symptoms described by the owner.

I asked if I might be shown a case, and was promptly taken

to a local slaughtering establishment where two heifers between eighteen months and two years of age had been sent for slaughter. One of the animals was affected with the udder trouble and I had an opportunity to make a postmortem.

*Postmortem appearance.*—The carcass appeared normal and fairly fleshed. No enlargement or abnormal appearance of the body lymph glands. Abdominal and thoracic viscera normal, with no involvement of lymph glands. The udder was the only organ showing disease. One teat and quarter were involved, being greatly enlarged, reaching the dimensions of approximately 6 by 14 inches. On palpation the teat and quarter showed extreme induration. In cutting through the quarter a hard fibrous mass was displayed, with pus pockets intermixed, filled with a greenish-hued fetid pus. The cut surface was smooth to the touch, and the parts affected displayed a progressive and prolonged interstitial inflammation.

*Differentiation.*—The macroscopic pathological appearance showed no calcified deposits nor enlarged lymph glands as are seen in tuberculosis. The pus was thin, greenished hued and fetid, which would exclude actinomycosis. There was no appearance of local injury or point of infection. Therefore the condition indicated chronic garget commonly seen in aged dairy cows at the time of slaughter.

In my experience in practice, in the field and in postmortem work in connection with United States meat inspection, this condition in young heifers was not observed in the United States.

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## BREED AND SEX SUSCEPTIBILITY OF CALVES TO BLACKLEG

*By* J. W. LUMB

*Sioux City, Iowa*

THE QUESTION has often been raised as to what breed and sex of calves is the most susceptible to blackleg infection. Some contend that the beef breeds are more susceptible than the dairy or dual-purpose breeds. Others hold that the reverse is true. The data regarding sex and breed susceptibility appearing to be so exceedingly meager, it was thought that a short compilation of that kind might be of interest to the profession.

The calves from which these data were compiled were bought on the open market in mixed lots without reference to breed or sex, keeping, however, within a certain weight and age limit. They were inoculated with a standard dose of pure virus for the routine production of blackleg aggressin. Each calf received practically the same dose of virus, administered in the same way. This virus had been previously standardized so that variations in the virulence of the virus would be practically negligible. Almost every lot of calves presented for inoculation at any one time was made up of both males and females, as well as being of a mixture of breeds, all of which tends toward a uniformity of results in eliminating unequal variations. The calves were all grade calves. Any that did not show a distinct breed type were put in the no-type column.

Table 1.—Classification by Breed

| Breed | 1918 | | 1919 | | 1920 | | Total Inoculated | Total Immune | Per cent Immune |
|---|---|---|---|---|---|---|---|---|---|
| | Inoculated | Immune | Inoculated | Immune | Inoculated | Immune | | | |
| Aberdeen-Angus | 36 | 6 | 32 | 5 | 29 | 8 | 97 | 19 | 19 |
| Hereford | 50 | 8 | 130 | 17 | 172 | 30 | 352 | 55 | 15 |
| Holstein | 77 | 9 | 123 | 21 | 84 | 22 | 284 | 52 | 18 |
| Jersey | 30 | 4 | 42 | 9 | 19 | 2 | 91 | 15 | 16 |
| Red Polled | 18 | 2 | 71 | 11 | 66 | 8 | 155 | 21 | 13 |
| Shorthorn | 354 | 54 | 491 | 92 | 488 | 103 | 1,333 | 249 | 18 |
| No Type | 71 | 13 | 112 | 24 | 119 | 18 | 302 | 55 | 18 |

It will be seen from Table 1 that the breed susceptibility varies but slightly, the limits of the immunes in all the breeds falling between thirteen and nineteen per cent. Three of the seven classes each showed 18 per cent of immunes. Figuring the percentages by years for the Shorthorns we get 15 per cent, 18 per cent and 21 per cent. This leads to the conclusion that the great number of Shorthorns used gives us a more reliable percentage of immunity than we get from the small lots used of Aberdeen-Angus (19 per cent) and Red Polled (13 per cent). Had there been as many animals inoculated of these breeds as of Shorthorns the per cent of immunes might have been brought to approximately the same level.

The conclusion, then, would be that the breed has very little if anything to do with the susceptibility of the individual animal.

Table 2.—Classification by Sex

| Class | 1918 | | 1919 | | 1920 | | Total Inoculated | Total Immune | Per cent Immune |
|---|---|---|---|---|---|---|---|---|---|
| | Inoculated | Immune | Inoculated | Immune | Inoculated | Immune | | | |
| Heifers | 265 | 53 | 416 | 79 | 425 | 100 | 1,106 | 232 | 21 |
| Bulls | 180 | 23 | 239 | 28 | 207 | 18 | 626 | 69 | 11 |
| Steers | 236 | 20 | 367 | 54 | 310 | 55 | 913 | 129 | 14 |

In figuring the yearly percentages of immunes of the three types inoculated, in Table 2, we find that the heifers in all three years, using a large number of animals, showed a persistently high per cent of immunity as compared with either the bulls or the steers. There is not a great difference between the number of heifers and of steers inoculated. While the number of bulls is only a little more than half that of the heifers, it would seem as if enough animals were used to form a representative group. It will be seen that a total of the males gives an 8 per cent lower average immunity than for the females.

The conclusion would be that heifers are, when inoculated, more highly resistant to blackleg than the males.

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## TRAUMATIC PERICARDITIS

*By* B. J. FINKELSTEIN

*Cherry Valley, N. Y.*

I REPORT the following case as being both interesting and somewhat unusual:

Holstein cow, five years old. Saw her first on August 8. No history other than that she had dropped off in her milk, and refused to eat. Examination showed the following: Temperature, 102.3; pulse, 118; respiration, 24. Cow was recumbent, but would get up without much urging. On auscultation over the heart region I could determine a splashing sound. Rumination had not stopped, according to the owner. I could not detect any rumen contractions. On percussion over the region where reticulum lies cow showed marked pain.

I diagnosed the case as traumatic gastritis and administered a saline purgative. Told the owner the cow would die and I should like to "post" her after she had gone to bovine heaven.

I heard nothing of this case until August 24. Then the owner called on me and informed me that the cow was still alive but very weak. He agreed to butcher her so that I might perform a postmortem.

When I saw her again I found on examination that the pulse was very weak and frequent (I could not count the number of beats per minute). The brisket and submaxillary space were both markedly edematous. However, the feces looked normal.

Postmortem showed the following: Liver enlarged to twice its normal size, was friable, and the capsule peeled easily. Lungs both congested throughout. Heart was about five times normal size, and the muscular walls were taut against the pericardial sac. On opening the reticulum a thin, evil-smelling pus slowly oozed away. I followed the course of the abscess and found a piece of wire about three inches long on the pleural side of the diaphragm. Here the abscess was just about the diameter of the wire. The pericardial sac was punctured and there was a small hole in the right ventricle. On opening the right ventricle about four quarts of the same thin, evil-smelling pus was released. The endocardium was thickened and rough. The valves leading from the right auricle were hard and greatly enlarged. The right auricle, although somewhat enlarged, appeared quite normal. The left side of the heart showed no very marked changes other than that the muscle was somewhat thinner than usual.

I have wondered since why this cow did not die of acute septicemia. The heart weighed 14½ pounds with its pus contents.

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## DYEING DOGS IN PARIS

Reports from Paris indicate that many women are having their pet dogs dyed a tint to match the gowns they wear.

The blonde, henna, rust and brown shades are easily accomplished as coats of both Chows and Pekes responded well to the usual peroxide and henna treatments, but some difficulty has been experienced in securing matching lavender dachshunds and purple Pomeranians.

The fashion has been further complicated by disinclination to use German dyes on French dogs.

# ABSTRACTS

MEASURES TAKEN IN SWITZERLAND AGAINST FOOT-AND-MOUTH DISEASE IN RECENT YEARS. L. Panisset. Rev. Gén. Méd. Vét., Jan. 15, 1921, pp. 1-12. (Abs. in Bul. Inst. Pasteur, vol. 19, p. 536.)

These measures are grouped under three main headings: General slaughter, sanitary measures, and treatment with blood of recovered animals.

Slaughter is a good measure at the beginning of an epizootic, when there are but few centers of infection. It may also be useful at the end of an epizootic, in freeing the country of isolated centers. But when the disease is widespread this measure becomes useless.

Sanitary measures, although well applied in Switzerland, have proved effcacious only in the first centers quarantined. When the centers become numerous all sanitary barriers are powerless to prevent the extension of the disease.

It is rather difficult to determine the value of treatment with the blood of recovered animals. This treatment is not preventive. It seems capable only of diminishing the gravity of the natural development of the disease.

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THE TONSILS AS A PORT OF ENTRY FOR INFECTIONS. Julius Citrona. Deut. Tier. Woch., 1920, no. 27, p. 240.

The physiological function of the tonsils has not been fully explained. Their functions may be excretory, as well as being the point of entry for infections and at the same time they may be apparently normal.

In producing experimental paratyphus the normal lymphatic esophageal ring has been found to be the point of entry for infections per os. It is therefore probable that in this manner natural infection with typhoid and paratyphoid takes place. Infection of the tonsils is not proof of their being a port of entry for infecting material. This is only probable, as tonsillar affections precede general infections. Tonsillar relapses lead to chronic tonsillar diseases. Injuries to the tonsils give rise to fresh attacks and only tonsillectomy favors

recovery. The connection between relapsing chronic superficial tonsillitis, polyarthritis rheumatica, glomerular nephritis, acute endocarditis, pleuritis, and cryptogenic sepsis is simply the result of tonsillar infections. J. P. O'LEARY.

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THE PREPARATION OF POLAR STAINS IN VARIOUS BACTERIA. E. Epstein. Arch. fur Hygiene, vol. 90 (1921), pp. 136-154.

Polar staining is not characteristic of any particular species of bacteria. It may be induced quite generally in bacilli, and hence has no differential diagnostic value. The usual heat fixation with the flame injures or destroys polar staining. Alcohol fixation conserves it. Polar staining following alcohol fixation is not an artifact; a true morphological picture is obtained. Organisms must be cultivated in fluid media to show the polar staining; when grown on solid media only few species show it. Polar staining seems to be related to the vital processes connected with growth and fission of the organisms, and is caused by the intake of water. W. N. BERG.

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CONCERNING OTITIS EXTERNA PARASITICA OF THE CAT. D. Bruderlein. Deut. Tier. Woch., 1920, no. 27, p. 231.

The treatment of a malady produced by the acarus, *Dermatophagus auricularis felis*, is accomplished by a thorough cleansing of the external auditory canal. The agent best suited for this purpose is liquid paraffin. As specific remedies the following are recommended: 3 per cent creolin, balsam of Peru, styrax liniment, or 5 per cent oil of caraway. These remedies are applied at 2 to 3 day intervals. They possess excellent parasiticidal properties, are non-irritating, are readily miscible with oils or fluid fats, and in addition are easily preserved. The animal's bed should be treated with 2 per cent formalin solution or creolin water. The author has found that when fresh mites are placed in liquid paraffin they die on the fifth day. From this he concludes that the general opinion which exists broadcast that the mite is destroyed in a relatively short time as a result of suffocation is not substantiated.

J. P. O'LEARY.

ETIOLOGY OF ACUTE GANGRENOUS INFECTIONS OF ANIMALS. Hilda Hempl Heller. Jour. Infect. Diseases, vol. 27 (1920), pp. 385-451.

In this very interesting article the author reviews the three great groups of anaerobic invading microorganisms found during the world war in human wound infections. Of these three groups the writer has placed the *Vibrion septique* as being first in incidence in animal infections. Blackleg is placed second in incidence in the anaerobic animal infections. The writer has examined thirteen specimens of bovine muscle tissue all of which yielded the blackleg organism. In three instances the *Vibrion septique* organism was also isolated, as well as the blackleg organism. In no instance was a pure *Vibrion septique* infection found.

The author has also studied fifteen *cultures* of anaerobic microorganisms recovered from cattle *by different individuals.* Ten of these cultures were found to be *Vibrion septique* strains, and five were found to be blackleg strains.

Eleven dried sheep muscle tissue samples and one culture recovered from sheep constitute the investigations made by the author on the anaerobic infections in sheep. The one specimen originating in the United States proved to be blackleg, while the other ten received from Europe and labeled "Bradsot" were found to be *Vibrion septique* infections.

In so far as the theme of this paper is concerned, the sheep investigations if presented in the abstract would be misleading, since practically all of the instances given were cases of European bradsot infections, and do not represent the anaerobic infections found in sheep in this country.

Throughout this article the author contends that spontaneous *Vibrion septique* infections in cattle and sheep are common, presumably because in the examination of thirteen samples of bovine muscle tissue, three *Vibrion septique* strains were isolated in addition to the blackleg organism. The author is of the belief that in these three instances the animals in question died as a result of a mixed blackleg-*Vibrion septique* infection. In spite of the fact that in no instance was a pure *Vibrion septique* infection encountered and on the strength of the three cases of alleged mixed infection, the writer draws the rather remarkable conclusion that the veterinarian does not know blackleg disease

when he sees it, that the majority of the veterinary profession has misunderstood the etiology of the anaerobic invasions of cattle, or must deliberately include, when making a diagnosis of blackleg, all infections caused by the *Vibrion septique* group of organisms, as well as the blackleg organisms.

In view of the seriously faulty technique employed by the author in insolating the anaerobic microorganisms from the tissue specimens examined, together with the lack of evidence to support the conclusions drawn, it is more than probable that the writer's judgment concerning the anaerobic infections in animals is as badly warped as is the expressed opinion that "the attitude of the veterinary profession has been that we already possess all the necessary knowledge concerning blackleg."

Most certainly the judgment of one so inexperienced in the anaerobic infections of animals can not be taken seriously or in any degree to alter the mature judgment of those investigators who for years have studied these diseases in the field as well as in the laboratory. W. S. GOCHENOUR.

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AN INVESTIGATION INTO THE PURITY OF AMERICAN STRAINS OF BACILLUS BOTULINUS. George F. Reddish. Jour. Infect. Diseases, vol. 29 (1921), pp. 120-131.

The author calls attention to the fact that descriptions of *Bacillus botulinus* by various investigators of this country differ markedly in certain respects from those of European investigators. In his study of this organism, the author employed nineteen different strains of the organism obtained from various laboratories in different sections of the United States. In every instance but one, impurities in the culture were observed in the stock strains, the contaminant having all the characteristics of *Bacillus sporogenes*. When *Bacillus sporogenes* and *Bacillus botulinus* are present in the same material, they are so closely associated that it becomes a difficult task to separate them, the former, being the less fastidious of the two, is favored by the method of isolation generally used by American workers. The author's results explain clearly the reasons for the sharp differences noted in the descriptions of the organism given by the European and American investigators. Furthermore, the use of impure cultures in the making of antiserum is unsatisfactory

and may account for the absence of uniformity in the results of treatment of botulism victims. Thus, the use of antiserums in the prophylaxis of botulism has given good results experimentally in some instances, but it has not as yet been pronounced a success in actual practice. The toxicity of the strains of *Bacillus botulinus* which are contaminated with *B. sporogenes* will vary with the age of the culture and with the proportion in which the contaminant is present.

The author summarizes his work as follows:

Nontoxic strains were isolated from 18 out of 19 so-called "strains" of *B. botulinus* examined. These nontoxic isolations were proved to be *B. sporogenes.*

Isolations of *B. sporogenes* were made from stock "strains" of *B. botulinus* by 4 different methods, that is, by the use of anaerobic plates, simple dilution, aerobic plates with *Staphyloccus aureus,* and by heating in order to kill vegetative forms after the spores of *B. sporogenes* had been formed.

"The "strains" of *B. botulinus* examined resemble morphologically and in their action on meat mediums and milk, pure cultures of *B. sporogenes,* except that the action of *B. sporogenes* is more rapid, and in some cases carried nearer to completion.

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CALCIUM AND TUBERCULOSIS IN RABBITS. R. Massini. Schweiz. Med. Wchnschr., vol. 161 (1921), p. 233. Abs. in Amer. Rev. Tubere., vol. 5 (1921), p. 102.

Massini injected young rabbits with calcium chloride after they had been inoculated with tuberculosis, and found that they lived a little longer than the controls.

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A SOURING OF BEEF CAUSED BY BACILLUS MEGATHERIUM. Hubert Bunyea. Jour. Agr. Research, vol. 21 (1921), pp. 689-698.

The author has made an interesting study of a condition known as "sour beef" which occasions no little economic loss, especially to firms which have no facilities for the storage of meat to prevent this alteration. As a result of his studies, the following conclusions were drawn:

The phenomenon known as the souring of beef is a bacterial one.

The organism responsible for the souring of beef is *Bacillus megatherium.*

*Bacillus megatherium* will sour beef under a wide range of temperature, but not in the absence of oxygen.

In the souring of beef by *Bacillus megatherium* propionic acid is produced.

*Bacillus megatherium* is nonpathogenic for experimental animals (rabbits and guinea pigs) and does not produce an appreciable amount of toxin when propagated upon raw beef.

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DISTEMPER IN THE PIG. J. P. M'Gowan. Scot. Jour. Agr., 1920, vol. 3, No. 4, p. 407.

This paper discusses an epidemic, among pigs, of what the author terms distemper, the disease which is usually observed in dogs and cats. The origin of the infection was traced to newly purchased sows which were suffering from mild "colds," thought to have resulted from the train journey. However, in about a fortnight after the first of these sows had farrowed the disease broke out among their pigs in a very severe form. Later the infection spread quite generally to all the young pigs in the piggery.

The symptoms in the older animals were usually mild, consisting of lack of condition, a soft, husky cough, and sometimes a definite paresis of the hind quarters. Recovery was the rule. Iu young pigs the symptoms were much more marked and the mortality was high. There was sneezing, eyes reddened, mattery, and lids gummed together; discharge from the nose, and a husky cough. In some cases there developed red papules on the skin, which later became tipped with scabs. In late stages of the disease there was slight diarrhea and sometimes paralysis, particularly of the hind quarters. The sick animals had a "doggy" smell similar to that present in distemper of dogs.

Postmortem examinations on a number of pigs showed quite constantly pneumonic lesions of greater or less extent. No pathological alterations were found in the abdominal organs. Bacteriological examination of the trachea and lungs yielded cultures of the distemper organism (*Bacillus bronchisepticus*) in all cases. The heart blood was sterile.

The disease was effectively controlled by enforcing strict sanitary measures. These included frequent spraying of walls of

sties, passages of pig houses, etc., with hot lime wash; confining pigs to their own sties; removing sows about to farrow to a clean, lime-washed house; avoiding transferring infection on utensils, feed, and person of caretaker; keeping dogs and cats out of pigs' houses; killing off hopelessly ill pigs. In addition to these, a vaccine prepared from various strains of the distemper organism was used. It was recommended that pigs should be injected about four days after their birth. L. T. GILTNER.

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THE USE OF A TWO PER CENT WATERY SUSPENSION OF ANIMAL CHARCOAL (CARBO MEDICINALIS MERCK) IN LUMBAGO (AZOTURIA). D. Detlefsen. Berlin Tierärztl. Wchnschr., vol. 37 (1921), no. 27, p. 315.

A case of azoturia was treated by injecting 200 c.c. of a 2% watery suspension of animal charcoal intravenously. In the course of a half hour following the injection the symptoms were aggravated, but after three or four hours the condition of the patient improved, and on the second day of the attack the horse had practically recovered.

In septic diseases and in catarrhal fever of the upper air passages, the same treatment gave good results. In all instances it has proved harmless and the cost is insignificant. Doses of 100 to 200 c.c. are recommended. L. T. GILTNER.

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## REVIEW

LABORATORY MANUAL IN GENERAL MICROBIOLOGY. Prepared by the Laboratory of Bacteriology and Hygiene, Michigan Agricultural College, Ward Giltner, Head of the Department. Published by John Wiley and Sons, Inc., New York. Price $3.50.

This is a second edition of the Laboratory Manual in General Microbiology issued in 1915. A comparison with the first edition shows that the author and his coworkers have added greatly to the excellence of their previous work. The steady advance of knowledge in microbiology and laboratory technic requires that standard books on these subjects be kept up to date. That the author is alive to this fact is shown by the ex-

tensive revision and the mass of new information which the work contains.

That a book of 472 pages, including 42 pages devoted to the index, and a large, valuable list of references, can encompass so great a fund of practicable information is a tribute to the concise, clear manner of expression of the author. The exercises are enlivened by frequent, appropriate explanations for the steps taken or agents used.

The purpose of the manual is to supply the student with detailed information which will make him more independent in the course of his laboratory work. The subject matter is divided into three major parts and an appendix. Part one is primarily for the purpose of giving a working knowledge of laboratory methods used in the study of microorganisms, including molds, yeasts and bacteria. Part two consists of exercises demonstrating the various physiological activities of microorganisms. Part three deals with applied microbiology and includes exercises on the microbiology of air, water, sewage, soil, the dairy, plants, and exercises on animal diseases and immunity. All told, the three parts contain 129 well-chosen exercises accompanied by a profusion of helpful illustrations.

Detailed instructions are given for the various biological tests, and for the preparation of important diagnostic agents, toxins, antitoxins, bacterins and vaccines.

A 100 page appendix gives numerous formulae, tables and a wide variety of information of great value to the laboratory worker. A book of this character not alone fills the purpose for which it was primarily intended in a most satisfactory manner, but finds a ready place in all bacteriological laboratories because of its value as a reference text on laboratory technic.

Years of teaching and laboratory work in their several specialties have given the author and his associates an opportunity to study the requirements of students in general microbiology, and the book represents an accumulation of their observations and material obtained from the best sources of microbiological knowledge. B. A. G.

## ARMY VETERINARY SERVICE

### EXAMINATION FOR APPOINTMENT

An examination for appointment as second lieutenant, Veterinary Corps, Regular Army, will be held November 14, 1921, throughout the continental limits of the United States, to fill sixteen (16) vacancies, under the following provision of law: "Appointments in the Veterinary Corps shall be made in the grade of second lieutenant from reserve veterinary officers between the ages of twenty-one and thirty." (Sec. 24*e*, Act of June 4, 1920.)

Applications for this examination will be made on the blank form for application for a commission in the Regular Army (Form 88, A. G. O.). This blank form may be obtained at any military post or station or from Corps Area Commanders, or from the Adjutant General of the Army, Washington, D. C.

Applications, after completion, will be forwarded to the Commanding General of the Corps Area in which the applicant resides or to the Commanding Officer of the nearest military post or station of the United States Army. In case the post or station commander receives an application he will immediately forward it to the Corps Area Commander.

It will be noted that the law quoted in the first paragraph requires that applicants for appointment be selected from reserve veterinary officers. Consequently, if an applicant is not a member of the Veterinary Officers' Reserve Corps, he will, before examination, make application for membership direct to the Adjutant General of the Army, Washington, D. C., stating that the appointment in the Officers' Reserve Corps is desired to make him eligible to take the Regular Army examination.

In addition to being a member of the Officers' Reserve Corps, an applicant must be between the ages of twenty-one and thirty years at the probable time of appointment, which will be about two months after the examination. He must also have a satisfactory general education, must be a graduate of an acceptable veterinary college, legally authorized to confer the degree of Doctor of Veterinary Medicine, or its equivalent, and which requires students to have covered satisfactorily a four years' high school course, or its academic equivalent, as a minimum

entrance requirement, and which maintains this course of instruction covering a period of four years of not less than seven months in each year. The applicant must also have had, subsequent to graduation, at least one year's experience in the practice of veterinary medicine, or its equivalent in hospital work, or as an instructor in an approved veterinary college, or as an employee of the Bureau of Animal Industry of the United States Department of Agriculture, actively engaged in veterinary professional work.

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## AN ARMY VETERINARY PICNIC

The Army veterinary officers attending the School of Meat and Food Inspection in Chicago gave a very delightful picnic in Jackson Park on the afternoon of September 22. Those present were Colonel and Mrs. Steel, Major and Mrs. Hill, Major and Mrs. Jewell, Captain and Mrs. Whitney, Captain and Mrs. Houston, Captain Eakins, Lieut. and Mrs. Juzek, Lieut. and Mrs. Lovell, Lieut. and Mrs. Curley, and Lieut. and Mrs. Herbott. Lieut. Wolf, a lone bachelor, managed to forget his loneliness with two young ladies. Dr. and Mrs. A. H. Baker, Dr. and Mrs. D. M. Campbell, Dr. and Mrs. N. S. Mayo, Miss Dorothy Mayo and Miss Marguerite Jones were also guests.

This year a careful watch was kept on Dr. Campbell and the base of supplies was not raided. There was surely some "chow." A bushel of fried milk-fed chicken "an' everything."

After a successful attack on the eatables Mrs. Baker made a motion that all the civilian veterinarians present join the Army, where they would have such fine eats and nothing to do. This started hostilities immediately, but owing to the excellent organization of the veterinary corps the civilians were willing to refer the matter to the Disarmament Convention in Washington.

After the treaty of peace had been concluded a delightful time was spent conversing until dark, when a swarm of Hun mosquitoes from "no man's land" made a concerted attack. As silk hose is not an efficient protection the forces, both military and civil, were withdrawn to previously prepared positions.

N. S. MAYO.

# AMERICAN VETERINARY MEDICAL ASSOCIATION

## Proceedings of Fifty-Eighth Annual Meeting, Denver, Colo., September 5 to 9, 1921

### MONDAY MORNING, SEPTEMBER 5, 1921

The first session of the fifty-eighth annual meeting of the American Veterinary Medical Association convened at 9:45 a. m. in the City Auditorium, Denver, Colorado, President David S. White presiding.

The invocation was delivered by Rev. James E. Davis, pastor of the Central Christian Church of Denver.

PRESIDENT WHITE: Ladies and gentlemen, there are three reasons why I am very happy to introduce to you the gentleman who will deliver to you the address of welcome. The first and most important reason is that he is a near-Ohioan. He confesses to having been born as near Ohio as he could have under the circumstances, namely, the State of Michigan. (Applause.)

Secondly, he has been out in this great western country nearly half a century. A large part of this time he has been engaged in the cattle industry. Thirdly, he happens to be the Mayor of Denver. I take great pleasure in introducing to you, therefore, the Honorable Dewey C. Bailey, Mayor of Denver. (Applause.)

#### ADDRESS OF WELCOME

MAYOR BAILEY: Mr. Chairman, Ladies and Gentlemen, Members of the American Veterinary Medical Association: As your chairman has said, for a great many years I was in the livestock business in Colorado. My ranches were out about sixty miles southeast of Denver. A great many years ago I bought and brought a great many southern cattle into this northern country, before they shipped them on the railroads or thought they could. We drove them or trailed them across into this country and Wyoming. Texas fever was distributed over this northern country by these southern cattle. There was not a large loss by death, but it continued along the trail where these cattle were driven until veterinarians and men well experienced in that disease and in the cattle business made up their minds that there was no doubt but what that disease was brought into this country by southern cattle. So I have made up my mind since being requested to make an address of welcome that there were a great many things that I knew of that showed that the veterinarians of the United States were an exceedingly useful body of doctors of this country.

While in the ranch business I also raised a great many horses. I started in the livestock business in a very small way and grew

up with it. I can remember an old span of horses that I had started with that were as loyal and faithful and trustful and hard-working a team as a man ever saw. I loved them. I loved a great many of the horses that became personal pets of our family as the years rolled by, but especially this team that never failed me, helped me make a living, and honestly (that was forty-odd years ago), I dream of that old team occasionally yet. They made such an impression on me that I never forget them and never will.

Of course, in handling a great many of these horses, raised in this country, I had use many times for the veterinarians. Since I have been Mayor, before our fire department was motorized, we had all the way from 100 to 165 head of horses. I came in contact with a number of veterinarians in that way, and especially Dr. Dunleavy, who looked after our horses; and I want to say that the help and kindness shown to these dumb animals, the most loved, the most intelligent and hardy of any animal grown in the world, makes me see what a great necessity there has always been for veterinary surgeons.

I am not disposed to make a long talk. I know you are here for business. The good people of Denver, through their Mayor, extend to you greetings and a most hearty welcome to Denver. We hope this convention will be successful in its work and duties. We hope you will like our city, as I am sure you will. Where else could you see such a morning as we have here this morning—cool, the air bracing?

Denver is a city of 270,000 people. Times are good here notwithstanding the reports that you hear from other sections of the country. Denver gives more free amusement to its citizens than any other city of its size that I have ever heard of. There will have been held in this city by the first day of January 90 conventions. People like to come here, and we like to have them. I wish again to extend to you a most hearty welcome to the City of Denver. (Applause.)

### RESPONSE TO ADDRESS OF WELCOME

PRESIDENT WHITE: Dr. H. E. Bemis, of Ames, Iowa, will respond to the Mayor. (Applause.)

DR. BEMIS: Mr. President, Mayor Bailey, Ladies and Gentlemen: I learned to take orders from Colonel White during the war, and no matter how difficult the task was that he asked me to do, all I could do in those days was to salute, say "Yes, sir," and proceed to do the best I could. I remember when we were in France when he got tired of office duties he would start for a trip to the front, knowing full well when he left that the waiting list in the horse hospitals of France was longer than the waiting list in the hotels of Denver at the present day. However, in spite of that fact, about the second day after his

departure I would receive a telephone message to prepare to receive about three thousand animals within the next twenty-four hours. Of course, all I could do was say "Yes, sir," hang up the receiver and proceed to do the best I could. But I did have one other loophole in those days, and that was to practice the good old army method of passing the buck, and simply get busy on the telephone and distribute these animals to a number of the already overcrowded hospitals.

So in this instance, when I received word a few days ago that the President expected to have me make the response to the address of welcome, I simply said to myself, "Well, the Colonel has got 'em again! When, oh when will this cruel war be over?" But this time I was not able to pass the buck.

To think of being welcomed to a city like Denver and a State like Colorado, with apologies to our friend Briggs, "Ain't it a grand and glorious feelin'" simply to be here? Why, sir, you couldn't keep us out! We have been prepared to come to this city and this State for the last five years, by the wonderful word pictures of our good friend Dr. Glover. You may think we didn't want to come to Denver because we delayed so long after his first invitation, but I assure you that was not the reason at all. We were simply so inspired by his oratory that we wanted to wait for the grand finale which he gave us last year in Columbus, in spite of the effort of as good a State as Iowa, when he landed the convention, and we are glad to be here and be welcomed here today.

Colorado has the opportunity and has learned the happy lesson of combining work and play. This State, as we all know, is called "the Playground of America," "the Switzerland of America," and yet Europe can boast of no such pageant as the Rocky Mountains show us every day from the streets of Denver or from the trips which we are to enjoy. The land of magnificent heights, of awe-inspiring depths, of roaring waterfalls and laughing brooks and ozone-laden air and rejuvenating waters—we realize and appreciate them all. Surely the Creator has expressed himself in superlatives in the State of Colorado, and without any stretch of the imagination we can believe with Shakespeare that there are "tongues in trees, books in the running brooks, sermons in stones, and good in everything."

But there is another reason, perhaps a more special reason, why this particular body should be glad to come to Denver and to Colorado, it seems to me, and that is on account of the name and fame of this State in her industries. We have long known of her resources in iron and coal, gold and silver, and the precious metals, but we are more particularly proud of her accomplishments in agriculture and in the good ally of agriculture, veterinary medicine.

Colorado has many special problems to solve in veterinary

medicine. Some years ago she came to Iowa to get someone to head the work, and for a good many years the rest of America has watched these men and their progress and has been proud of their accomplishments. It is a gratification to know that Dean Glover and his corps of workers, and Dr. Lamb and his workers, and the practitioners of the State of Colorado, though few in number, yet large in efficiency and earnestness and enthusiasm for the work, have been able to make their impression upon such people as Mayor Bailey, and I am sure upon the State as a whole. So it seems to me that we should be particularly proud and happy to come to Colorado to do these men honor, and it is our hope that the presence of this body in this city will give them new inspiration for the work which lies ahead.

I am sure, Mr. Mayor, it is the pleasure of all present to thank you for your gracious welcome to the City of Denver and to the State of Colorado. (Applause.)

### PRESIDENT'S ADDRESS

PRESIDENT WHITE: The next item on the program is the President's address.

(President White delivered his address. It was published in THE JOURNAL for October, 1921, page 9.)

PRESIDENT WHITE: The next item on the program is the presentation and adoption of the minutes.

SECRETARY MAYO: I hereby present the official report of the last meeting at Columbus as the report of that meeting.

(On motion of Dr. Munce, seconded by Dr. Kelley of Albany, N. Y., the minutes were adopted as the official report of the preceding meeting.)

Adjournment.

## MONDAY AFTERNOON

### GENERAL SESSION

The meeting convened at 1:30 p. m., President White presiding.

### REPORT OF EXECUTIVE BOARD

PRESIDENT WHITE: The first item is the report of the Executive Board, which will be presented by the Secretary.

(Secretary Mayo read the list of applications for membership.)

(On motion of Dr. Kinsley, seconded by Dr. Connaway, it was voted to suspend the rules and instruct the Secretary to cast the ballot of the Association for the election of the persons whose names had been read.)

PRESIDENT WHITE: Is there any further report from the Executive Board?

SECRETARY MAYO: I have here the applications of Dr. W. F.

Klee of Lima, Peru, a graduate of Royal Veterinary College of Copenhagen, Denmark; Dr. Carlos Lloveras of Buenos Aires, Argentina; Dr. L. Santa Maria, Pedros Negras, Mexico, graduate of the National Veterinary College of Mexico; Dr. H. P. Shepard, Killeen, Texas, graduate of the Southwestern Veterinary College, 1916; Dr. W. R. Smith, North Brookfield, Mass., graduate of Harvard Veterinary College, 1898; Dr. E. H. Sterling, Uruguay, graduate of the National Veterinary School of Uruguay.

These gentlemen are graduates of veterinary schools that are not recognized by the Association. Four of them, I think, are graduates of national veterinary schools of other countries. One is a graduate of Harvard. That veterinary school is no longer in existence; in fact, it went out of existence before this Association had an accredited list of veterinary colleges, although I think graduates of that school have always been admitted. The Southwestern Veterinary College is no longer in existence. When a veterinary school has gone out of existence the Constitution and By-Laws provide that the graduates may be elected to membership under suspension of the rules five years after the college has suspended. The Executive Board recommends that the rules be suspended and these men whose names I have read be elected to membership.

(On motion of Dr. H. P. Hoskins, seconded by Dr. Connaway, the recommendations of the Executive Committee were approved and the persons whose names were read were admitted to membership in the Association.)

SECRETARY MAYO: It is recommended by the Executive Board that the Constitution and By-Laws be amended as follows:

Section 7, Article G, by adding: "Excepting members residing in countries other than the United States and Canada, the said ballot shall be returned in ninety days after the date of issue."

This section deals with the election of members from the various representative districts. We have members in the Philippines, and it is impracticable to get a ballot to the Philippines and get it back within the sixty days provided by the Constitution and By-Laws. Another district aside from the one including the Philippines is South America, so that there are really two districts that will be affected by this. The recommendation is simply to change the Constitution and By-Laws to give ninety days' time to get a ballot to and from these foreign countries.

Another recommendation for a change in the Constitution and By-Laws is that Article 11 of the By-Laws be changed by adding: "Excepting the Editor, Secretary, Business Manager and Treasurer, who shall assume their duties within thirty days following their election."

At present the Constitution and By-Laws provide that the officers shall assume their duties immediately upon election. The annual meetings of the Association come just about at the closing of the fiscal year, or the beginning of the fiscal year, which is on the 1st of September. At this time the dues are being collected from the members and there is an immense amount of work connected with these offices. It makes it impracticable to change them immediately at that time. They really have to have a little time to get things entered and straightened out. It has been customary for several years to have the old Secretary hold over until the end of the month and get things in shape for his successor. That is to provide for that.

Another recommendation by the Executive Board is to change Article 5, Section 5, to read: "That the Treasurer shall give an acceptable bond to the Executive Board."

At present the Constitution and By-Laws provide that the Treasurer shall give an acceptable bond in the sum of $10,000. On the recommendation of the Treasurer last year, the Board increased that bond to $25,000, the amount of money, approximately, in the treasury of the Association. You will note that this recommendation does not specify any amount that the Treasurer shall give bond for. That is left entirely to the Executive Board. If they should have $50,000 they can then demand a $50,000 bond.

PRESIDENT WHITE: You have heard the further report of the Executive Board. This may be received now and will lay on the table until the next annual meeting.

(On motion of Dr. Kinsley, seconded by Dr. Hoskins, the recommendation of the Executive Board was accepted and the recommendations for amendment were laid on the table.)

SECRETARY MAYO: The question of the ethics of certain forms of advertising has been brought up by members of the Association. This refers particularly to advertising by moving pictures, and the Executive Board recommends that advertising by moving pictures, except the veterinarian's name and address, should be considered unethical.

PRESIDENT WHITE: You have heard the report in regard to advertising through the medium of the moving picture. This would constitute an amendment to Article 19 of the Code of Ethics.

SECRETARY MAYO: I hardly think it would be considered an amendment, but rather an interpretation of the Code of Ethics.

PRESIDENT WHITE: Moving pictures do not seem to be specifically included. If you desire to take it as an interpretation, it would not be an amendment.

SECRETARY MAYO: I think it would be a great help. Some firms supply veterinarians with slides and films, dealing, we will

say, with hog cholera, in which the veterinarian's name appears in connection with certain brands of serum. The matter was brought to the Secretary's attention by the Resident Secretary from this State. The Secretary doesn't like to pass the buck, but sometimes I like to have some backing in the matter. At other times matters have come to my attention and I have taken them up with the manufacturers. These slides and films will go out to veterinarians in country districts, and sometimes they don't consider whether it is a violation of the Code of Ethics or not. One of the manufacturers, in reply to my request that he discontinue it because I didn't think it was ethical, said that he wanted to do what was ethical, but he would like to have this Association's opinion on it. That is why it was brought to the Executive Board and to the Association for an expression of opinion.

PRESIDENT WHITE: The Chair will recognize expression of opinion in regard to this action of the Executive Board concerning the use of the moving picture as a medium of advertising.

DR. EICHHORN: I move that recommendation of the Executive Board be adopted.

DR. JENSEN: I would like to hear that recommendation again. I presume this attack is directed at the firm I represent. The Government has been using posters to encourage and stimulate the farmers to vaccinate hogs, and in order to help out the idea promulgated primarily by the Government we took it up and offered to get our friends these slides. Considerable criticism arose, and when we heard of it, we advertised it and put it in our little paper. Dr. Mayo, I think, had written a letter saying that it was not considered ethical. That is as far as we are connected with it. When we took the matter up we thought we were rendering a real service to the country and to the hog raisers.

DR. GEORGE HILTON (Canada): Section 5 of Article 19 of the Code of Ethics distinctly states that in advertising the veterinary surgeon shall confine himself to his business address. It also states that advertising specific plans of treatment, medicines, advertising through the medium of posters, illustrated stationery, or newspapers, will not be countenanced by the Association. I think the first sentence in that section defines exactly how far we can go in advertising matters. I, therefore, second the motion that the Executive Board's recommendation be accepted.

SECRETARY MAYO: For Dr. Jensen's information I may say that some firms supply posters, for instance.

DR. JENSEN: That leaves me out.

SECRETARY MAYO: Some firms supply little posters with prancing hogs and grinning hogs, with the veterinarian's name. With one firm particularly, I took it up. I wrote them as nice a letter

as I could, telling them I didn't think it was ethical and that I thought they were leading some young veterinarians astray, so to speak. They said they didn't want to do that and so on, but they rather questioned my judgment in the matter and said they wished the American Veterinary Medical Association would take it up, and that they would stop if the Association said they should.

DR. CONNAWAY: It seems to me that there is a rather deeper and more vital matter concerned in this. The moving picture is certainly a fine means of education of the laity on many of these things on which they should be educated. It seems to me that we are opening the way for carrying to the farmers much misinformation about the ways and means of controlling animal diseases. I see in the room just back of you certain methods of treating contagious abortion, for instance, which to my mind, if those doctrines are spread through moving pictures and in other ways, will carry a menace in a very forceful way. I think we ought to be very careful as to how we back up the advertising business to the laity by commercial concerns and through their agents, the practitioner who may be using their products. This is a more important thing than the simple question of whether some individual practitioner is ethical or not. This is a matter I would like to see thrashed out.

DR. L. L. GLYNN (Monte Vista, Colo.): I am Resident State Secretary for this State, and, as Dr. Mayo said, he passed the buck to me. The reason I brought this proposition up was that I had been asked whether that would be ethical. The reference was made by firms supplying serum, and the advertising of the slide would be confined strictly to that firm, but the veterinarian's name would appear at the bottom of the slide as the agent supplying that particular serum. I didn't think the thing was ethical advertising, and hence referred to the Secretary. That is the reason I wrote the letter and probably the reason why so much was stirred up. I didn't think that any but authorized agents for that particular firm should have their names connected with the particular firm supplying the serum.

(It was voted, on motion of Dr. Eichhorn, seconded by Dr. Hilton, that the report of the Executive Board regarding moving picture advertising be adopted.)

SECRETARY MAYO: The question of appointing a special committee to help formulate a Federal Narcotic Law was referred to the Executive Board, and they recommend that the President be authorized to appoint a committee, not to exceed three, to confer with the representatives of other associations on the revision of the Federal Narcotic Law.

(It was voted, on motion of Dr. Eichhorn, seconded by Dr. Adams, that the recommendation of the Executive Board with reference to the Federal Narcotic Law be accepted.)

SECRETARY MAYO: The question of publishing a directory of members with the Constitution and By-Laws was considered for the coming year, and in view of the financial condition of the Association it was recommended that the names of the new members be published in the JOURNAL of the Association, also the names of the new committees, the resignations, deaths, etc., and that no directory be printed this year.

(It was voted, on motion of Dr. Kinsley, seconded by Dr. Hoskins, that the recommendation be accepted.)

SECRETARY MAYO: This is a report of the Executive Board meeting in Chicago last November of which most of you have been informed through THE JOURNAL. At the suggestion of Treasurer Jacob, it was moved that the bond of the Treasurer of the American Veterinary Medical Association be increased to $25,000, which was done.

## SECRETARY'S REPORT

PRESIDENT WHITE: That concludes the report of the Executive Board. The next item is the report of the Secretary.

(Secretary Mayo read his report, as follows:)

The Association has now an active membership in good standing of 3,935, and 39 honorary members. During the past year 17 members have died, 12 resigned and 17 have been reinstated. Three hundred sixty-three have been dropped for nonpayment of dues. There are about 225 applications for membership this year.

The general economic depression that prevails has had a marked influence upon our membership, as it has on practically all associations. One large and influential organization has reported a loss of 25 per cent of its membership during the past year. The number of members who have delayed sending in their dues is greater than ever before, in spite of special efforts to collect them, and the number of letters expressing financial stress has been much greater than usual.

The interest in the Association and its work has been excellent.

The expenses of the Secretary's office, aside from the Secretary's salary, may be classified as follows:

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| Printing and stationery | $1,438.41 |
| Clerical help | 668.27 |
| Postage | 378.36 |
| Office supplies | 71.27 |
| Incidentals | 11.92 |
| Freight and hauling | 64.57 |
| Storage charges | 21.00 |
| Buttons for the meeting | 18.00 |
| Expenses of Columbus meeting | 150.30 |

The printing and stationery item includes stationery not only for the Secretary's office but also for Resident Secretaries and various committees, and also for printing the directory of the members, committees and officers of the Association, as well as the Constitution and By-Laws. Four thousand five hundred copies were printed, and a copy was sent to each member of the Association. A few copies were sold. Previously the directory with the Constitution and By-Laws had been published with the proceedings of the Association in an "Extra Proceedings Number" of the JOURNAL OF THE A. V. M. A.

On account of the ruling of the Postmaster General, it was not possible to follow the plan previously in force. The cost of printing the directory was $560, and the postage for mailing was $80, a total of $640, which was charged to the General Association Fund. This expense had been previously carried on the Journal Fund.

Your attention is called to the fact that the influence of the A. V. M. A. is extending to other countries, and this year we have applications for membership from Mexico, Uruguay and Argentina. Practically all countries in the Americas are represented in our Association, and we have members in various parts of the world. If notices were inserted in some foreign journals calling attention to the advantages of being a member of this Association, it is quite probable that members could be obtained from other countries and the scope and the influence of our Association could be made world-wide. There is no veterinary association in the world that compares, either in size or influence, with the American Veterinary Medical Association.

It is interesting to note that one of our members, Dr. G. A. Roberts, of Sao Paulo, Brazil, was the first to recognize an outbreak of rinderpest in Brazil, the first time that this disease has ever been reported upon the American hemisphere.

The term of the member of the Executive Board for the Fifth District expired. A postal card nomination and election was held in accordance with the Constitution and By-Laws. The following were nominated: Drs. C. E. Cotton, W. F. Crewe, C. P. Fitch, W. B. Spencer and C. H. Stange. After the votes had been received and before they had been counted, a number of requests came in from members to change their ballots to some other candidate. This problem had never been presented before, and the matter was referred to the Executive Board. The Secretary was instructed by the Executive Board to count the first official ballot as it was sent in. Dr. C. E. Cotton, of Minnesota, was elected member of the Executive Board from the Fifth District.

In preparing the Constitution and By-Laws for publication in the directory, some changes appeared to be desirable. The proposed changes were submitted to the Executive Board for their consideration and will be presented in the report of the Board.

According to instructions of the Executive Board, the Secretary obtained from the former Librarian of the Board, Dr. Frost, of Ithaca, N. Y., the material that was in the Librarian's possession. Dr. Frost asked the Secretary for directions as to shipping, and was advised that if the weight of material was less than 100 pounds to send it by express; if over 100 pounds, to send it by freight. The Secretary was somewhat surprised to receive two and a half tons of books by freight. Nearly all of this was made up of printed reports dating from the year 1906. Fortunately, the material was sold for nearly enough to pay the expense.

The Secretary was instructed by the Executive Board to advertise in THE JOURNAL and to sell as many copies of the reports as he could for 25 cents each. This was done, and a few dollars' worth were sold. The balance was ordered sold for old paper with the exception of a few sets that were selected and made as complete as possible in order to supply possible inquirers.

So far as the Secretary knows, there is not a complete set of the Reports of the Association that belongs to the Association. If any member of the Association can supply reports earlier than 1890, the Secretary will be very glad to receive them and will see that they are preserved as a permanent record of the Association.

Very few complaints have been received from members who do not receive their JOURNAL promptly. The few reports that have come in have been taken up promptly with the Editor of THE JOURNAL, who

has given his hearty cooperation in getting the mailing list arranged and kept up to date. Most of the complaints received are from members who have changed their addresses and have failed to notify either the Editor or the Secretary.

It is important that we, as individual members, should render all the assistance within our power to the Editor of THE JOURNAL in helping him make it more valuable in every way.

During the past year your able President has attended a number of State and local association meetings as a representative of the A. V. M. A. This has helped very materially in bringing the A. V. M. A. into a more sympathetic and practical relationship with these associations, and this has been of mutual benefit.

With the growth and development of the Association and its widening field of usefulness there comes an increased expenditure of funds. Part of this is due to general high cost of living and part to the general tendency to expand. This is proper, provided the expenditure is warranted by the results to be obtained and the situation of our treasury. It is important that the Association as a whole in convention assembled and the individual members should carefully study the expenditures and proposed expenditures so that they may be fully informed how the funds of the Association are used.

The matter of procuring a permanent home for the Association is already under consideration by the Executive Board and will probably be put into effect before many years. It is well that we should keep this in view and be prepared to meet the obligations which this will impose.

At the last meeting of the Association in Columbus, Ohio, the distribution of the Veterinary Relief Fund was placed in the hands of the President and the Secretary of the Association. During the year relief has been given to the wife of one of our honored members who died, leaving his immediate family and two old ladies, the doctor's mother and his wife's mother, with very little means of support. Upon the recommendation of the local veterinarians in that State, as well as the Chairman of the Executive Board, the sum of $500 was left available to the doctor's widow.

Five hundred dollars was contributed last year as an additional contribution to the Anglo-American-Franco-Belgian Veterinary Relief Association. This was acknowledged in a very grateful letter from Professor Vallée, who also sent a printed report showing in detail how the funds have been expended.

The Association has a substantial fund for the relief of needy members and their families, and any member of the Association knowing of cases where the fund can be used judiciously and effectively are urgently requested to take the matter up immediately either with the Secretary or the President.

The American Veterinary Medical Association has taken an active part in securing proper recognition for the Veterinary Corps in the United States Army. There are still some changes that should be made in order that the Corps may be more efficient, and I recommend that this matter be given consideration either by the Committee on Legislation or a special committee appointed for this purpose.

In preparing the program for the annual meeting of the Association the different sectional presidents and secretaries are expected to prepare the programs for their respective sections. In some instances articles are secured for one section that properly belong in another section. The final rearrangement depends on the Secretary of the Association. It is recommended that the chairmen and secretaries of the different sections provide their programs sufficiently early so that any readjustment that may seem best can be made directly with the officers of the sections, rather than to leave the matter until the last

moment before going to press. It is believed that this arrangement will prove more satisfactory.

You will note that the program for this meeting is not as full as for several meetings previous. Formerly the meetings have been crowded, and it was decided, after consultation with the Executive Board, that it would be better to give more time for discussion and for general business. It is hoped that this slight change will meet with the approval of all.

It is important that the membership of the Association be increased. At present approximately one-fourth of the eligible veterinarians of the United States and Canada are members. While this is a higher percentage than that of the American Medical Association, we should have a much larger membership. At present the problem of getting new members depends largely upon the Resident Secretary. Some Resident Secretaries have done excellent work and some have done practically nothing, in spite of all the stimulating efforts that I could bring to bear upon them. In this connection I wish to thank the inspectors in charge as well as officials of local associations of the Bureau of Animal Industry for their splendid assistance in getting new members. We ought at least to double our membership. There are very few students graduating from veterinary colleges at present, and we must depend upon the practitioners in the field for increased membership. Doubling our membership would not only greatly increase our revenue but would extend the influence of the Association. I recommend that this matter be given your careful consideration and that a committee be appointed to carry the plans into effect. In connection with increasing the membership, such a committee could be of value in getting new subscribers for THE JOURNAL and stimulating an interest in it.

I wish to express my appreciation for the cordial support and assistance given by the officers of the Association, the committees, the Executive Board, and individual members in carrying on the work of the Association.

(Applause.)

PRESIDENT WHITE: You have heard this very excellent report of the Secretary. What is your pleasure in regard to it?

(It was voted, on motion of Dr. Munce, seconded by Dr. Kinsley, the report of the Secretary be received and referred to the Executive Board.)

## TREASURER'S REPORT

PRESIDENT WHITE: The next item of business is the report of the Treasurer.

DR. JACOB: The Treasurer's report has been prepared and printed in pamphlet form. It has been distributed among the members, and it gives detailed information regarding the Association's financial affairs.

SECRETARY MAYO: Mr. President, I have had an opportunity of seeing this report, and I think that Dr. Jacob can give a brief statement of the general financial condition of the Association, and I think the members ought to have such a brief report. There are a good many that might not understand the report as given in this formal way, and I would like to have him present such a brief report. I know he has one.

PRESIDENT WHITE: You have heard the suggestion of the Secretary that the Treasurer give us an abstract of his very excellent report.

DR. JACOB: For the benefit of the Executive Committee, so that they might understand more readily the exact status of the financial affairs of the Association, I got up a little supplemental report. To a considerable extent it is embodied in the general report. Our total balance, cash and bonds on hand, at the time that the books were closed for the fiscal year, was $27,341.26. Out of this, $20,000 (or about that amount) is invested in United States Government and Canadian bonds; that is, it has been the policy of the Association to purchase the bonds on an equal basis between the United States Government bonds and the Canadian bonds; consequently, $10,000 was put into each.

We have been dividing the Association's funds into three parts, the Association proper, the Journal Fund and the Relief Fund, and have tried as nearly as possible to keep these accounts absolutely separate so that we may know without any difficulty just how each part of the Association is operated.

One of the most interesting things, probably the most important thing, for the Association to give consideration to, is that our net profit, so to speak, our net gain for the past year, for all the activities of the Association, was $978.36. In other words, we have run practically even. This includes also the uncollected accounts, which amount to a little over $1,250. The interpretation of that is this: Had it not been for the interest we collected during the past year, our Association would have run behind. The condition was a little bit different during the year 1920, when the net gain was $3,329.78. So that you see we are losing ground a little bit. That is an important point and one not to lose sight of.

So far as the Association proper is concerned, the net gain during the past year was only $47.31, practically even, and the little gain that we made was on the part of THE JOURNAL, where we made $912.37.

That, in a few words, I believe covers the status of affairs of the Association.

It might be of further interest, however, to know just how this money is handled. As I stated at the beginning, the $20,000 representing the face value of the bonds at maturity is, of course, held in bonds, and the interest is collected at regular intervals. It is necessary in order to meet the demands of the Association to keep a certain amount of money on check deposit, and it has been my policy to keep as small an amount of money on check deposit as it was possible to just squeeze through with, in order to be able to keep as much as possible on time deposit. The time deposits, of course, can be converted to the checking account at any time. Just at this time we have $7,000 on time deposit.

Since the report was made out $3,000 worth of Canadian bonds, which were short-time bonds, matured; consequently I had those cashed, and we have on time deposit just at this time $7,000, and practically $3,000 covering the three funds for checking.

No funds are paid by the Treasurer except on orders from the President and the Secretary covering the Association Fund, the Editor and the President covering the Journal Fund, and the President and the Secretary covering the Relief Fund.

PRESIDENT WHITE: I would like to ask the Treasurer if all of the money belonging to the Association is in the hands of the Treasurer, or is not some of it in the hands of special committees? Are there any other funds to be accounted for?

DR. JACOB: So far as I know the only money that is not in the hands of the Treasurer is the money that has been maintained by the Salmon Memorial Fund. Who is holding that money at the present time I don't know. As far as I know, that is the only one that I don't handle.

DR. J. R. MOHLER: Mr. President, I would like to say, in reply to your request regarding other funds, that the last check I sent to the Treasurer was on the 31st of July, in order that he could get it in this year's report. Since that time we have collected over $500 in cash and $900 in bills receivable in the form of notes. So with this $1,400 added THE JOURNAL earnings would be a little better than the $912 indicated by the Treasurer.

DR. JACOB: That shows our best revenue is THE JOURNAL.

SECRETARY MAYO: That is good in a way, since that report covers the matter thoroughly; but that doesn't alter the fact that the Association ought to know that we are just about running even at the present time, and that is what I wanted to bring out in this report. If the Journal Fund had published the Constitution and By-Laws last year, my funds would have been $600 better off.

Another thing that you should know is that at present all the funds turned over to the Treasurer by the Secretary are divided on a three-fifths basis; that is, 60 per cent of it goes to the Journal Fund. My understanding is that according to the Constitution and By-Laws only three-fifths of the dues ought to be turned over to the Journal Fund. You understand that considerable revenue is derived or sent in by the Secretary aside from dues; for instance, this year there are 180 applications for membership. Each one pays $5 initiation fee. Three-fifths of that is turned over to the Journal Fund. I have collected a few other funds from various sources that are turned in, not dues at all. That is also divided on a three-fifths basis. The Journal Fund gets three-fifths of that, and two-fifths of that goes to the general Association Fund. I am not saying this in a critical

way. It is all Association funds. It is your fund and belongs to the Association, but I thought you ought to know that.

PRESIDENT WHITE: Does any member wish to ask of the Treasurer any question?

DR. HOSKINS: The question was raised as to the Salmon Memorial Fund. I am not a member of that committee, but I can say that the funds are on deposit in the name of Salmon Memorial Fund in the Rittenhouse Trust Company. They are on time deposit and drawing interest. I believe there is about $4,000 net fund. My father was secretary-treasurer of the committee, and the account is in the name of the fund.

SECRETARY MAYO: I think the Association ought to know, too, of a fund of $500 that was voted, I think, at the Philadelphia meeting and was in the hands of Dr. Thomas Smith of New Jersey. It was a fund designed to afford some immediate relief to members of the Association who were starting overseas and found themselves about strapped when they got to the Atlantic coast. The balance of this fund that wasn't expended, I think four hundred thirty-eight dollars and some cents, was turned over to me by Dr. Smith, and I turned it in to the Treasurer. That, I would say, was not divided 60-40.

DR. STANGE: If I am not out of order I would like to make a motion that we extend a vote of appreciation for the services of Dr. W. Horace Hoskins as the secretary and treasurer of the Salmon Memorial Fund, and that the funds now be turned over to the Treasurer for his care.

(The motion was seconded by Dr. J. G. Eagle, and carried.)

(It was voted, on motion of Dr. Munce, seconded by Dr. Hilton, that the report of the Treasurer be received and referred to the Auditing Committee.)

## REPORTS OF COMMITTEES

PRESIDENT WHITE: The next item of business is reports of committees. I will call for these committees in the order in which they are printed in the program.

(The reports of the Sub-Committee on Journal, Committee on Intelligence and Education, Committee on Legislation, Committee on Resolutions, Audit Committee and Committee on Necrology were called for, but these committees were not ready to report.)

PRESIDENT WHITE: Is the Committee on History ready to report?

## REPORT OF COMMITTEE ON HISTORY

DR. J. W. ADAMS: Two years ago a committee was appointed by the Chair to write the early history of this Association and to fill in the gap up to the time when our first minutes appeared in printed form. During the first year of the committee's history quite a little work was done, but no systematic work until a year

ago, when I was reappointed chairman, and since that time I have attempted at every opportunity that I had to write such a history. The nature of the work is such that it has to be carried on by one man. The committee that is with me is perfectly willing, but it is impossible to get the data that we want through several members, and I have attempted to do that myself. During the last year I have written to members of the families of deceased founders and practitioners associated with them, and 126 letters have accumulated. I have accumulated quite a stack of newspaper articles bearing on the meetings, and a great number of private letters, and it will take some little time yet to glean from this mass of material what I am after. I am attempting to write a little biography of the men who were the founders, and an account of their professional activities, and I have accumulated quite a number of photographs of the men. At this date I can only report progress. I believe it will take about four months yet to carry that up to 1891 or 1892. There are still gaps where I have nothing to put in. That is the report of the work of that committee to the present time.

(It was voted, on motion of Dr. Fitch, seconded by Dr. Kinsley, that the report be accepted.)

(The following additional committee reports were called for but were not ready: Committee on Anatomical Nomenclature and International Committee on Bovine Tuberculosis.)

## REPORT OF COMMITTEE ON ABORTION

(Dr. Fitch read the report of the Committee on Abortion, as follows:)

Last year your Committee on Abortion presented as a part of its report a resolution which was unanimously adopted. This resolution was as follows:

"*Be it resolved*, That the American Veterinary Medical Association strongly urges that larger appropriations for the investigation of bovine infectious abortion be made by Federal and State Governments and through such agencies as the National Research Council to make possible cooperative work by the institutions engaged in investigating this disease."

Your committee this year has directed its efforts toward carrying out the directions of this resolution. A preliminary meeting was held in Chicago early in December. At that time it was voted that data should be collected as to what institutions were engaged in the study of this disease and what phases of the infection were being investigated. It was also decided to interest, if possible, the National Research Council in the project. Correspondence was begun with Dr. C. E. McClung, who was chairman of the Section of Biology and Agriculture of the Council, also with Dr. G. W. McCoy, chairman of the Section on Medicine. After considerable effort a conference was secured with the representatives of the Council, your committee and a few other investigators. The Council appropriated a sum of money to defray partially the expenses of this conference. This meeting was held in Washington, D. C., August 4, 1921. As a result Dr. McCoy asked that a brief be prepared stating the economic losses resulting from this infection, its importance to the breeding industry, the in-

vestigations now being carried on, amount being expended in such investigations, and the facts which should be known about bovine infectious abortion and the approximate cost of such studies. These data are now being prepared by your committee and will be submitted to Dr. McCoy some time during this month. He will in turn present them before the Interim Committee of the Council. If they approve of the project as a worthy one they will initiate efforts toward securing funds for the study of this disease. These funds will probably be expended at those institutions already engaged in the study of this disease, although this is not at all mandatory. We have good reason to believe that our efforts will be successful in securing additional money to be devoted to the study of bovine infectious abortion.

The investigations of the past year have not influenced us to alter or amend the report presented to the Association by the committee last year. You will recall that the report of last year consisted of 14 short paragraphs, each concerning some particular phase of the disease. Among the 14 paragraphs, as far as your committee has been able to determine, 13 have received universal approval, and only one, the first, has been reasonably criticized. The paragraph in question is that in which the disease was named "bovine infectious abortion," and the adverse criticism is based on the fact that this name is derived from a symptom which may or may not be present. The true character of the infection seems to be a placentitis. In order to meet this objection a subcommittee has been appointed. Dr. Ch. Wardell Stiles, an expert on nomenclature, has been requested to serve as a member. The other members are Dr. E. C. Schroeder and Dr. Ward Giltner. They will report to the general committee on this question some time during the coming year. We believe that next year's report will settle this troublesome question.

Another point in last year's report which needs clarifying is that relating to the diagnosis of the disease. Another subcommittee consisting of Dr. J. M. Buck, Dr. G. T. Creech and Dr. W. E. Cotton has been appointed to study this question and submit a report with the definite purpose of standardization of methods and technique in order to avoid many embarrassing and confusing discrepancies.

A careful study of bovine infectious abortion shows that there are many phases of the disease which are still imperfectly understood. Definite information can be obtained only by carefully conducted experimental work. Because of the character of the disease and the species of animal affected, research studies are very expensive and reliable results slow to obtain. Your committee feels that all available efforts should be directed toward aiding such studies and assisting in solving the problems in connection with bovine infectious abortion, which is of the greatest economic importance to the livestock industry.

C. P. FITCH, *Chairman.*
E. C. SCHROEDER.
WARD GILTNER.
J. F. DE VINE.
HERBERT LOTHE.

PRESIDENT WHITE: You have heard this excellent report of the committee. What is your pleasure in regard to it?

(It was voted, on motion of Dr. Connaway, seconded by Dr. Adams, that the report be accepted.)

DR. EICHHORN: I desire, in view of the importance of this question which the committee has now under consideration and the necessity of the continuation of the work, to move that this committee be continued and a sufficient fund be provided for the work for the coming year.

(The motion was seconded by Dr. V. A. Moore.)

DR. STANGE: I would like to ask what we mean by sufficient funds. In view of the financial situation we are facing, I think we ought to be careful, because we must remember we have a Budget Committee that considers all expenditures of the Association for next year, so I would like to amend that motion, unless it is pretty well understood, that the Budget Committee decide the amount.

DR. EICHHORN: That was understood.

DR. STANGE: With that understanding I will be glad to withdraw my amendment.

(The motion was put and carried.)

### COMMITTEE ON INTERNATIONAL VETERINARY CONFERENCE

PRESIDENT WHITE: We will hear from the Committee on International Veterinary Conference, J. R. Mohler, chairman.

DR. MOHLER: The secretary of the committee will make the report.

DR. EICHHORN: The committee has not had any occasion to do any work in the past year, for the reason that in the report of the committee of last year we pointed out that Great Britain was very anxious to have the next International Congress held in London again. Great activity has been started to reestablish the International Veterinary Council, but up to date it has not been accomplished, principally due to the fact that our esteemed colleagues, particularly of France, would not reestablish intercourse with the German veterinarians. Our last year's report also requested that this committee be continued, not for the reason of inviting the next International Congress to the United States, but in case it should be decided to have the International Congress anywhere in Europe. This committee could resume work immediately and establish a committee for the United States to cooperate with the International Congress wherever it would be decided to have it. For this reason we believe that a committee should be continued, and it is possible, in fact it is now almost certain, that a member of this committee will visit various countries in Europe next year, and it might be well to obtain the sentiment with regard to the next International Conference.

(It was voted, on motion of Dr. Fitch, duly seconded, that the report be accepted and the committee continued.)

### REPORTS OF COMMITTEES

PRESIDENT WHITE: Is the Salmon Memorial Committee ready to report?

(The committee was not ready to report.)

(The Liautard Memorial Committee was not ready to report.)

PRESIDENT WHITE: The Committee on Emblem.

DR. S. E. BENNETT: I am about the only member of the committee present. I have not been able to do anything. I have received no replies from my inquiries. There have been two or three designs submitted from different sources. If possible, I would suggest that you appoint one or two members present here to meet with me and we will make the report at some other time. I move that two members present at the convention be appointed to act with me. I suggest Dr. McKenna, who has taken considerable interest and submitted designs.

(The motion was seconded by Dr. Kinsley and carried.)

PRESIDENT WHITE: The Chairman will appoint two appropriate members for this committee.

The Committee on Unofficial Veterinary Remedies, Dr. H. J. Milks.

DR. H. D. BERGMAN: Dr. Milks has this report and I believe has not yet arrived.

PRESIDENT WHITE: Is Dr. Dick here, who is our representative on the Board of Managers of the Horse Association of America?

SECRETARY MAYO: In connection with that, I think the Association ought to know that this Association is a member of the Horse Association of America. They bought ten shares of stock last year at the Columbus meeting, costing $50. I supposed when we bought the stock that was all there was to it. It seems that when you buy $50 worth of stock you agree to pay $50 a year. That has been paid. I looked up and found we obligated ourselves, and I am sure the Association is willing to put that into it.

DR. JACOB: I believe that is for a period of three years.

SECRETARY MAYO: I think you will be interested to know that Dr. Santa Maria, who was elected to membership, is the official representative of the Mexican Government to this meeting. (Applause.)

Adjournment.

*(Proceedings to be continued.)*

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President Kinsley has appointed Dr. Cassius Way, of New York City, as member at large on the Executive Board of the A. V. M. A., to fill the vacancy made by Dr. Kinsley's accepting the presidency of the association. Dr. Way has resigned from the Committee on Intelligence and Education.

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President Kinsley has appointed Dr. James Fleming a member of the Committee on Intelligence and Education, to succeed Dr. L. Enos Day, and Dr. J. S. Koen to fill the unexpired term due to the resignation of Dr. Way.

## ASSOCIATION NEWS

### DENVER DOINGS

At the Wild West show at the foot of the Rocky Mountains, after numerous Westerners had been thrown from an outlaw broncho, the manager announced by megaphone before the grandstand that he had been requested to call for Col. David S. White, the champion broncho-buster of Ohio, to undertake to ride the outlaw. This was the only instance during the meeting when anyone succeeded in "getting the goat" of our effusive and irrepressible president.

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The horse has not been driven from streets and farms by the auto, declares a report submitted by the Horse Association of America to the Denver Convention. The report stated that horse equipment costs less than that for motors and that trucking companies and farmers find that certain parts of their work can be better done by horses than by motors. The result is that the demand for draft horses is found to be increasing.

To show this, Chicago was quoted as a representative example of American cities. In Chicago in 1920 there were approximately 30,000 horses in business, and in 1921 there are 33,000. The report disclosed a nation-wide campaign by the association to bring horses back into popularity, and also to increase the production of horses, which shows a startling decrease for the last three years.

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On the door of a restaurant frequented by many of the conventioners was a sign reading: "Let your conscience be your guide; pay the cashier before leaving."

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Major John H. Blattenberg was greatly missed at the convention, as the Westerners had planned to pull off a jack-rabbit game and a snipe drive, with the Major as master of ceremonies.

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A Missouri delegate to the convention reported seeing a woman, who had just come from the municipal market, with a live chicken under her arm, stop to give it a drink at a sanitary drinking fountain near the convention hall.

The only accident which happened during the famous automobile trip to Lookout Mountain was the loss of Major Cotton's cap, when a gust of wind from Bear Creek Canyon sent it flying down the roadside.

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A number of Eastern members hired an automobile one moonlight night and visited the coyote cage in the Denver City Park, thinking that a few yelps of the coyotes would make their Western trip more realistic. Report has it that notwithstanding much coaxing, the coyotes refused to comply.

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During the homeward trip from the grave of "Buffalo Bill" the trained eye of Dr. Edmund W. Weber, of Utah, enabled him to locate a drove of elk browsing on the side of Bear Mountain, a half mile or more away.

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Commissioner John M. Whittlesey, of Connecticut, was one of the most interested delegates at the convention. Much of his spare time was devoted to the study of the agricultural conditions in the vicinity of Denver, including garbage feeding, hog ranches, purebred cattle farms, certified milk dairies, and chicken ranches.

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Unfortunately, in the absence of its chairman, Dr. E. H. Shepard, there was no meeting of the Practitioners' Club, which was organized at the Columbus Convention last year.

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The only incident that marred the otherwise pleasant journey of the Convention Special, which left Chicago on the night of September 1, was the arrest of two of our fellow members for playing an innocent game of cards in Nebraska on the Sabbath. A "sheriff" suddenly appeared in the Pullman and announced the breaking of the law of the State and proceeded to take the two members to the platform of the car awaiting the stop at the next station. Much pleading and promising were without avail, and the ruse did not become apparent until another veterinarian who happened by and inquired as to the cause of the commotion, recognized the so-called sheriff as Dr. David S. Jaffray, a veterinary practitioner of Chicago.

## THE WOMEN'S AUXILIARY TO THE A. V. M. A.

The fifth annual meeting of the Women's Auxiliary to the A. V. M. A. was held in the Magnolia Room of the Albany Hotel in Denver, Tuesday, September 6, 1921.

The President, Mrs. A. T. Kinsley, Kansas City, Mo., presided. A short, interesting program was given, the main features being the President's address and a paper by Mrs. J. P. Turner of Washington, D. C., telling of the assistance the Auxiliary funds had given in that city.

A telegram of good wishes for a successful meeting from the former President, Mrs. W. H. Hoskins, was read.

The new members were accepted before the business meeting.

A revised constitution was presented and accepted, with minor changes. This incorporates in the object of the Auxiliary (Article II) a loan fund for needy veterinary students as well as financial assistance to veterinarians or their families.

The report of the Loan Fund Committee was read and proposition No. 1 was adopted with minor changes, so that, beginning July 1, 1922, the Auxiliary offers to lend to a senior in attendance at one of the recognized veterinary schools in the United States or Canada a sum not to exceed $350 at 4 per cent interest, subject to the conditions suggested by the committee.

A telegram of sympathy in her recent bereavement was sent to the ex-President, Mrs. W. H. Hoskins, and the following resolutions were adopted:

Whereas, God, in His infinite wisdom, has removed from our midst Dr. W. Horace Hoskins, the beloved husband of our most loyal and faithful member, the originator and first president of our Auxiliary; and

Whereas, Dr. Hoskins always showed the keenest interest in the affairs of our Auxiliary and was ready to help with advice and counsel;

Therefore be it Resolved, That we, as members of the Women's Auxiliary to the American Veterinary Medical Association, extend to Mrs. Hoskins our heartfelt sympathy in her grief.

And be it further Resolved, That the Secretary be instructed to send a copy of these resolutions to the bereaved

member, Mrs. W. H. Hoskins, and that these resolutions be spread upon the minutes of this meeting.

MRS. C. E. COTTON, *Chairman.*
MRS. I. A. JOHNSON.
MRS. N. S. MAYO.

As the tenure of office is two years there was no election at this meeting and the Auxiliary was adjourned to meet during the next annual meeting of the A. V. M. A.

MARGUERITE M. LOCKHART, *Secretary.*

## A. V. M. A. ELECTION NOTICE

Postal cards for nominations for a member of the Executive Board for District No. 6 will be sent out from the Secretary's office soon. District No. 6 comprises California, Nevada, Utah, Colorado, Kansas, Missouri, Arkansas, Oklahoma, Louisiana, Texas, New Mexico, Arizona, Mexico and Central America.

According to the Constitution and By-Laws, no member can vote who has not paid his dues for the current year.

All members of the A. V. M. A. who live in this district and who have paid their dues will receive both nominating cards and regular ballots. N. S. MAYO, *Secretary.*

## HELP WANTED

At the next meeting of the Executive Board of the A. V. M. A. that will probably be held in Chicago about the first of December, plans will be considered for increasing the membership of the A. V. M. A. The Executive Board will greatly appreciate suggestions from the individual members as to how our membership can best be increased. If you have any suggestions send them to me and they will be presented to the Board.

N. S. MAYO.

## DUES ARE DUE

About the middle of August statements for dues were sent to every member together with a program of the annual meeting. Quite a number have not paid their dues for the year 1920-21. If you have not sent a remittance, please do so now. The dues are payable in advance and if they are not paid promptly, it will be necessary to stop your JOURNAL. Please send your dues *now* to the Secretary.

## NEW YORK STATE VETERINARY MEDICAL SOCIETY

THE thirty-first annual meeting of the New York State Veterinary Medical Society was held at the Lafayette Hotel, Buffalo, July 27, 28 and 29. The meeting was called to order by the President, Dr. Wright J. Smith, at 10 a. m. The representative from the Mayor's office who was to give the address of welcome had to leave before the meeting was opened and that feature was deferred until the afternoon session. The entire morning session was used in carrying out the order of business up to the reading of papers.

At the opening of the afternoon session Mr. Sweeney, on behalf of Mayor Buck, gave the address of welcome. Dr. Chas. S. Chase of Bay Shore gave a very fitting response to Mr. Sweeney. Dr. E. Sunderville read a paper for Dr. L. A. Norget on the "Importance of Correct Diagnosis." Dr. Norget was present but just recovering from a very severe attack of tonsilitis he was neither able to read his paper nor take part in the interesting discussion which followed. Dr. P. A. Fish read the next paper. It was entitled "The Spermatic Secretion." Discussion was opened by Dr. W. W. Williams of Springfield, Mass. Dr. W. Reid Blair read an excellent paper on "Hookworm Disease in Dogs." Dr. H. J. Milks led the discussion on this paper.

The annual dinner of the society was held at the Lafayette Hotel. Dr. V. A. Moore gave an instructive and helpful talk on the veterinary profession. Drs. Wills, Hollingworth, Blair, DeVine and Volgenau were called upon for discussion.

These men sustained the interest in the topic and helped to make this part of the program one of the best features of the meeting.

The first session of the second day was given up to papers by Dr. W. W. Williams and Dr. W. L. Williams. The paper by Dr. W. W. Williams was on "Observations upon Reproduction in a Purebred Dairy Herd." The one by Dr. W. L. Williams was on "Observations upon Reproduction in a Purebred Beef Herd." These were interesting and valuable papers and they, with the discussions which followed, took up the whole of the morning session.

The papers of the afternoon were by Dr. J. W. Benner, Dr. W. G. Hollingworth and Dr. C. J. Spencer. The paper by Dr.

Benner was on "Mixed Infection in Swine." The title of the paper by Dr. Hollingworth was "Am I an Asset or Liability?" Dr. C. J. Spencer talked on the subject "A Few Ideas of an Ordinary Practitioner." Dr. Spencer illustrated his talk by several appliances which have been used with success in his own practice. The paper by Dr. Hollingworth was rich in the philosophy of an honorable and successful life in veterinary practice. Its teachings are those toward which every man in the veterinary profession should look.

Dr. D. H. Udall of Ithaca was elected President for the ensuing year; Dr. W. Reid Blair was elected Vice-President; Dr. C. E. Hayden, Ithaca, Secretary-Treasurer, and Dr. H. J. Milks, Ithaca, Librarian. Twenty-four new members were elected during the meeting. There is a steady and substantial growth which marks an increase in the influence of the organization. It was voted to send a telegram of sympathy to Dr. W. Horace Hoskins who, it has since proven, was in his last illness. Resolutions were presented on the death of Dr. D. W. Cochran, Dr. James Law and Dr. W. S. Eggleston. It was voted to hold the next annual meeting at Syracuse some time during the summer of 1922. The invitotion was extended by Dr. A. E. Merry on behalf of the Central New York Society.

The local Committee on Arrangements provided a boat ride to Crystal Beach as the entertainment for the evening of the second day. Crystal Beach is one of the most popular amusement places which Buffalo offers. A large number of members and visitors took advantage of the opportunity to visit Crystal Beach and found it an excellent place to have a good time.

During the morning of the third day a visit to the Stock Yards, Dold's Abattoir and the Crandall Sales Stables was made. There was opportunity to see the regular operations in the Dold plant. An instructive exhibit of pathological specimens had been prepared by the staff and there was much interest manifested in it. Lunch in the Dold dining rooms was an enjoyable feature of this visit. In the afternoon a large number of members and visitors took an automobile trip to Niagara Falls. A well-deserved vote of thanks was extended to the members of the local Committee on Arrangements for their splendid and effective work in caring for the meeting.

C. E. HAYDEN, *Secretary.*

## WESTERN MICHIGAN ASSOCIATION

The summer meeting of the Western Michigan Veterinary Medical Association was held at Manhattan Beach, Reeds Lake, Grand Rapids, Mich., August 16, about 40 being in attendance. An excellent entertainment program was enjoyed by all present.

New members accepted at this meeting were Drs. B. A. Perry of Hastings and R. C. Rawlings of Caledonia.

O. H. VAN BRUSSEL, *Secretary.*

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## U. OF P. VETERINARY ALUMNI DINNER

Following the ancient custom of all loyal sons of Old Penn, graduates of the Veterinary School of the University of Pennsylvania never fail to "gather 'round the congenial and festive board" whenever a few of the sons find themselves together.

True to Old Penn tradition every Penn man attending the recent A. V. M. A. meeting, held in Denver, attended the "Pennsylvania dinner" held Tuesday evening, September 6, at the Albany Hotel.

After a very enjoyable repast each man present told what he knew of the activities of the members of his class. Many very interesting reminiscences were indulged in and thoroughly enjoyed by all.

Dr. Chas. E. Cotton of Minneapolis presided, and the following submitted "reports": Dr. John W. Adams, Veterinary School, U. of P.; Dr. John R. Mohler, Washington, D. C.; Dr. T. E. Munce, Harrisburg, Pa.; Dr. H. P. Hoskins, Detroit, Mich.; Dr. H. W. Jakeman, Indianapolis, Ind.; Dr. M. Jacob, Knoxville, Tenn.; Dr. N. L. Townsend, New York City; Dr. Howard H. Custis, La Jara, Colo.; Dr. F. S. Jones, Princeton, N. J.; Dr. C. S. Shore, Lake City, Minn.; Dr. R. M. Staley, Philadelphia, Pa.

Dr. Munce reviewed briefly the report submitted by the Welfare Committee at the June, 1921, meeting of the Alumni Society. He told of the good spirit shown by the alumni body and particularly the Welfare Committee, during their meetings and discussions. Also of the valuable and cordial cooperation received from the faculty of the Veterinary School.

It is believed that the greatest possible good will result from the closer relationship between the school and the alumni body.

The enthusiastic and optimistic note that was evident in the remarks of everyone at this meeting shows that every Penn man is for Penn.

Dr. Adams reviewed the work at the school during the past few years, and told us that the prospects for a larger freshman class are better than they have been, at this season, since prior to the war.

Great satisfaction was expressed that the clinical material presented daily at the free clinic held at the Veterinary School is very abundant and includes practically all domestic animals. The work of the ambulatory clinic, which takes the students to some of the greatest dairy and livestock breeding establishments in the country, was described as one of the best conducted ambulatory clinics in operation. It is under the supervision of Dr. C. J. Marshall, who is giving the students the benefit of his years of practical experience, in conjunction with his course in Veterinary Medicine.

As proof that the present teaching methods and ambulatory clinics are fitting men to enter present day general practice it was recalled that, at the 1920 Alumni Day exercises, all of the clinical work was carried out by senior students, who accomplished the work like seasoned practitioners.

The meeting adjourned with a toast—an exceedingly dry toast—to Old Penn and the continued success of the Veterinary School.

R. M. STALEY, *Secretary.*

## GEORGIA VETERINARY ASSOCIATION

The fifteenth annual meeting of the Georgia Veterinary Association held in Macon, Georgia, September 21 and 22, passes into history as one of the most successful meetings ever held by this association. In spite of the fact that financial conditions in the South have been very discouraging during the past year, a larger number of veterinarians were present than have been in any meeting of the past five years.

The meeting, held at the Hotel Lanier, was called to order on the morning of the 21st by President Dr. B. E. Carlisle, of Montezuma, Georgia, and a welcome on behalf of the city of Macon was extended to the association by Roger Miller, Secretary of the Macon Chamber of Commerce. This welcome was responded to by Dr. John I. Handley of Atlanta.

The first session of the meeting was devoted to the discussion of the hog cholera question. The first paper, "Parasitic Infestation in Its Relation to Hog Cholera," given by Dr. Guy T. Cole, U. S. Inspector in charge of meat inspection at Moultrie, Georgia, was a revelation in that it showed that parasitic infestation of hogs causes more condemnation of hog carcasses than all other diseases combined. Thousands of pounds of pork are condemned in the packing plants; and if conditions seen in a small packing house are indicative of the country generally, millions of dollars are lost annually due to the needless harboring of parasites by the hogs on the farm. A motion was made at this time to give this paper as wide publicity as possible through the press of the State.

The next paper, "Intra-peritoneal Injection of Hog Cholera Serum Compared with Other Methods of Injection," by Dr. J. H. Coffman, Assistant State Veterinarian, Atlanta, was a short history of the vaccination of hogs against cholera. This paper brought out the fact that due to the ease of the operation, the absence of abscesses and the readiness with which the serum is absorbed, the intra-peritoneal method of injecting hog cholera serum is far superior to all other methods.

A short review of losses following the serum simultaneous treatment of hogs was given by Dr. D. L. Proctor, Hawkinsville, in his paper "Hog Cholera? If not, What?" Dr. Proctor reported that the herds under discussion had been treated and retreated with serum and virus alone and in conjunction with bacterins and, though the ante-mortem symptoms and post-mortem lesions were those usually found in hog cholera, the disease could not be checked. This paper brought out an abundance of opinions as to the cause of these losses and the real identity of the disease.

"Indications and Contra-indications for the Use of Bacterins" was well handled by Dr. J. L. Ruble of Quitman, who showed, by citing cases in his hog practice, that there are conditions in which bacterins are indicated.

The afternoon session of the first day was given over to the discussion of subjects pertaining to general practice. Dr. G. W. Browning, LaGrange, read a paper on "Some Things We Should Not Do in Canine Practice." He pointed out the fact that care should be taken in administering drugs to puppies, and showed

that simple remedies were often more effective than poisonous drugs. This paper brought out some interesting discussions along the line of canine practice. Following this paper, Dr. T. F. Abercrombie, Secretary of the State Board of Health, Atlanta, gave a report of the work being done by the State Board of Health Laboratory in the control of rabies in Georgia. The figures given by Dr. Abercrombie showed that rabies is on the increase in this State and as a result of this report, a committee was appointed, consisting of Drs. Bahnsen, Americus, and Burkland, Atlanta; Drs. Richardson and Purcells, Athens, and Dr. E. D. King, Jr., Valdosta, to investigate experiments conducted by the Board of Health Laboratory and if results were satisfactory, to recommend to the General Assembly of Georgia at their next meeting, the passage of laws controlling dogs with a view of lessening the occurrence of this disease.

Following the discussion of this report, Dr. John W. Salter, Dawson, gave an interesting paper on the pathology of and the technic of the operation against roaring in horses and mules. Dr. P. W. Hudson, Americus, then related some of his experiences with parturient paresis. This paper brought out a variety of arguments for and against the use of different drugs to be given in connection with the inflation of the udder in treating these cases.

The final paper in this session was given by Dr. E. L. Jarvis of Macon, on the subject of abortion. Dr. Jarvis gave an interesting review of his experiences with this disease in cattle. He considered the use of bacterins very satisfactory in treating herds of cattle infected with contagious abortion. The discussion following this paper was participated in by a number of veterinarians present, and brought out the fact that abortion is present in Georgia, not only among the cattle, but also in herds of hogs.

The evening of the first day was spent around the banquet table. Due to the absence of Dr. M. A. Morris, Dr. Bahnsen acted as toastmaster and a memorable evening was enjoyed by all present.

The morning of the second day was given over to the subjects of municipal meat and milk inspection. Dr. E. D. King, Jr., City Meat and Milk Inspector, Valdosta, in his paper, "Is Public Sentiment a Factor in Establishing Meat and Milk Inspec-

tion?'' showed that no public work can be successfully carried out without the backing of the public. In his opinion, the public should be educated as thoroughly in the relation of contaminated and diseased milk and meats to the health of a community as it is in the branches of the common school.

''Why Should a Veterinarian Be in Charge of Municipal Meat and Milk Inspection?'' was well handled by Dr. A. G. G. Richardson, Dean of the Veterinary Division, State College of Agriculture, Athens. Dr. Richardson, who for many years was a B. A. I. Inspector, showed that the veterinarian is the only man who can control the sanitation of meats and milk from the farm to the consumer. He also showed that no lay inspector can determine the health and condition of the animal or carcass before its products are offered for public consumption, and that few lay inspectors are qualified as sanitary officers.

Dr. R. K. Roberson, Milk Inspector of Columbus, Georgia, on ''Dairy Sanitation,'' gave the points to be considered in conducting a sanitary dairy and the production of wholesome milk. This paper brought out an interesting discussion.

The afternoon session was to have been a demonstration of the combination test for tuberculosis, but as no reactors were found, this part of the program was substituted for a clinic held in Dr. Jarvis' hospital.

The business session closed the meeting. Dr. A. L. Hirleman, U. S. Veterinary Inspector in charge of cooperative hog cholera and tuberculosis control, Atlanta, was elected President for the coming year, with Dr. A. G. G. Richardson, Athens, Vice-President. Dr. Peter F. Bahnsen, Americus, was unanimously re-elected Secretary-Treasurer. Upon invitation of the Chamber of Commerce and Drs. Epple and Toliver of Albany, that city was awarded the meeting of the association for the year 1922. It was voted that the next meeting be held between the fifteenth and thirtieth of September.

PETER F. BAHNSEN, *Secretary.*

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## MISSISSIPPI DELTA VETERINARY ASSOCIATION

The Mississippi Delta Veterinary Association held its regular quarterly meeting in Cleveland, Miss., on September 14, the sessions being held in the Firemen's Hall. The meeting was

called to order at 10 o'clock, with Dr. C. D. Crawford, president of the association, in the chair.

Papers were read and general discussions held on the following subjects: "Periodic Ophthalmia," Dr. S. E. Osborn, of Greenwood; "Black Tongue in Dogs," Dr. Luster, Clarksdale; "Swamp Fever," Dr. Sullivan, Sumner; "Rabies," Miss Goach, of the Bolivar County Health Department; "Hog Cholera," Dr. Fry, Jackson; and "Anthrax," Dr. Norton, of Greenville.

The association has asked the leading laboratories to study the question of a stronger vaccine for anthrax, and a committee of veterinarians reported to the association that the laboratories are now working on a product which will give permanent immunity.

The veterinarians in attendance were: Drs. C. D. Crawford, Rolling Fork, president; Bannester, Greenwood, vice president; E. B. Mount, Cleveland, secretary-treasurer; Fry, Jackson; Nye, Grenada; Clark, Grenada; W. S. Sullivan, Sumner; J. C. Boyce, Tutwiler; C. Stallworth, Drew; Luster, Clarksdale; R. H. Mohlenhoff, Cleveland; Osborne, Greenwood; Norton, Greenville; Berry, Leland; Royal, Hollandale; and Heath, of Grenada. E. B. MOUNT, *Secretary.*

## NEW VETERINARY CLUB ORGANIZED

A meeting of veterinarians of seven Central Pennsylvania counties was held recently at the home of Dr. H. T. McNeal, Sunbury, Pa., and a permanent organization, to be known as the Central Pennsylvania Veterinary Club, was formed. The club, which consists of veterinarians of Northumberland, Columbia, Montour, Snyder, Union, Juniata and Mifflin counties, was organized to form a closer personal and professional relation among the members, as well as for the discussion of subjects pertaining to the profession and otherwise advancing the interests of its members.

The meeting was well attended by veterinarians throughout the district. Dr. H. R. Church, of Harrisburg, deputy State veterinarian, gave an interesting talk. Dr. B. M. Potteiger, of Selinsgrove, was elected secretary. The next meeting will be held at Bloomsburg, and Dr. Wm. Smith, of Stillwater, Columbia County, was named president for that session. Meetings will be held every three months and a president for each meeting will be named from the section in which the meetings are held.

## MONTREAL VETERINARY CONVENTION

The Quebec Veterinary Medical Association, officially known under the name of College of Veterinary Surgeons of the Province of Quebec, will hold its annual convention early in November, when a veterinary surgeon officially delegated by the Société de Médecine Pratique, of Paris, France, is expected to be present to perform surgical work and possibly read one or two papers.

Owing to the uncertainty of the date of sailing of the French veterinary surgeon, it has been found impossible to set definitely the date of the convention, which will take place either the latter part of October or the very beginning of November.

Those who have had the good fortune of being present at former conventions will probably give the incredulous look when they read that the forthcoming convention will eclipse anything ever attempted before by the Montrealers, but the officers have the doggy determination which spells success with a capital *S*, and, since they have never before failed to keep their word, the convention is bound to be heard of favorably later on.

The demonstrations of the intended delegate from France will take the almost if not the altogether exclusive form of surgical work, and many are the names of prominent veterinary surgeons throughout the country who have signified their intention of being present.

The committee wishes to extend a hearty invitation to all veterinary surgeons outside the scope of the association to be present as guests, those of Quebec having already received a circular letter requesting them to attend as active members and asking for their cooperation.

The convention will take place at the Montreal Veterinary College, under the chairmanship of Dr. Albert Dauth, with Dr. J. H. Villeneuve as secretary-treasurer of the Organization Committee, at 266 Craig Street East, Montreal.

J. H. VILLENEUVE, *Secretary.*

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## THE PARIS VETERINARY CONFERENCE

Belated reports of the Paris conference from several of the French veterinary periodicals indicate that forty-three countries (including dominions, colonies, etc.) were represented by delegates.

Germany was represented by Prof. Robert Ostertag and two others.

Sir Stewart Stockman represented Great Britain and also Canada and was chairman of a committee.

The French delegation of eight included Doctors Calmette, Leclainche, Roux and Vallée.

Sir Arnold Theiler represented South Africa and Dr. W. H. Wray the United States. Prof. Hutyra was there representing Hungary, while Dr. DeJong was the delegate from the Netherlands.

Every country in Europe except Russia and Turkey seems to have been represented; also Brazil, Chile, Paraguay, Peru, Australia, New Zealand and Japan.

The president of the conference was a French Senator, Massé. The details of this conference will be found in the October, 1921, JOURNAL.

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## THE FIRST WORLD'S POULTRY CONGRESS

The first World's Poultry Congress was held at The Hague, Holland, September 5 to 15, 1921, Queen Wilhelmina and the Prince Consort opening the Congress. The work was divided into two parts, viz., that of papers, and that of an exhibition.

Of interest to veterinarians was the exhibition, which comprised a collection of pathological specimens of fowls, nicely mounted and staged by the State Serum Institute of Rotterdam, including specimens of tuberculosis, roup, diphtheric enteritis, parasites, etc. The other section on disease was by the Poultry Pathology Research Laboratory of the North Carolina Experiment Station and included enlarged photographs, photomicrographs and prepared specimens of tumors of fowls and blackhead of turkeys, etc.

The program of papers was divided into sections, the third being that of Hygiene and Disease, which was presided over by Dr. D. A. De Jong of the State University of Leyden. Twelve papers were presented in this section by veterinarians who have specialized in diseases of poultry. Among the contributors were Prof. Dr. J. Poels, Professor Dechambre, Dr. D. A. De Jong, Dr. B. F. Kaupp, Prof. Dr. L. Le Blieck, Dr. J. R. Beach, Dr. F. Van Heelsbergen, Dr. B. J. C. Te Hennepe, Dr. H. Van

Straaten, Dr. H. E. Reeser, Dr. L. F. Rettger and Prof. Dr. Camillo Terni.

Among the resolutions passed two are of especial interest to the veterinarian:

1. In all countries where poultry production is an important industry, that adequate courses be provided in the teaching of poultry diseases in all veterinary and agricultural colleges.

2. In all countries where poultry production is an important industry, that investigation of diseases of poultry be continued and a study of the advisability of official control of outbreaks of contagious and infectious diseases among poultry be made, and in the event of the advisability of such control, to determine which of the contagious diseases should be so controlled.

One of the excursion trips was to Rotterdam to visit the State Serum Institute. This institute conducts studies of diseases of the domestic animals of Holland, including poultry. It also maintains a laboratory for the examination of milk and water. It produces the sera and vaccines used in Holland for both prophylactic and curative measures in combating diseases of livestock and poultry. In this part of the institution there are kept 150 horses, 60 cattle and 200 hogs. The sera used on cattle are made from hyperimmunized cattle. It was found that some cattle suffered "serum disease" when sera from horses were used. The sera used in combating diseases of poultry included one for fowl cholera and one for fowl typhoid.

B. F. KAÜPP.

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## TUBERCULOSIS ERADICATION CONFERENCE

The Tuberculosis Eradication Conference, which will be held in Chicago, November 25 and 26, 1921, promises to be the most important meeting of its kind ever held in the United States. The program which appears below contains the names of many of the best authorities in their respective lines in the United States. Every person assigned to the program has a close connection with the tuberculosis eradication problem either from the human or livestock side. If there is not sufficient time to discuss all of the subjects thoroughly during the two days of the conference, it will be extended over another day. A feature of this year's conference will be the attendance of the field inspectors—county, State and Federal—assigned to work in the States

adjacent to Illinois. Every veterinarian, livestock owner or other interested persons who can arrange to attend the conference will be made welcome. The sessions will be held in the Red Room of the La Salle Hotel, Chicago, Illinois. The program follows:

NOVEMBER 25.

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| 10. a. m. | Address of Welcome | Hon. B. M. Davison. |
| 10.30 a. m. | Object of Conference | Dr. John R. Mohler. |
| 11.00 a. m. | The Work of the Bureau Experiment Station on Tuberculosis | Dr. E. C. Schroeder. |
| 11.30 a. m. | Relation of Bovine Tuberculosis to Human Health | Dr. W. A. Evans. |
| 1.30 p. m. | Obscure Lesions in Bovine Tuberculosis | Dr. L. Enos Day. |
| 2.00 p. m. | Clinical Studies Relative to Tuberculosis of Children | Dr. Isaac Abt. |
| 2.30 p. m. | Progress of Tuberculosis Eradication in Vermont | Hon. E. S. Brigham. |
| 3.00 p. m. | The Farm Bureau and Tuberculosis | Hon. James Howard. |
| 3.30 p. m. | The Eradication of Tuberculosis from a Purebred Herd of Cattle | Mr. James Brown. |
| 4.00 p. m. | The Specifications Under Which the Intradermic Test Should Be Made | Dr. C. E. Corwin. |

Discussion.

NOVEMBER 26.

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| 9.00 a. m. | Turning Back Accredited Herds to Approved Veterinarians | Dr. J. G. Ferneyhough. |
| 9.30 a. m. | The Economic Importance of Eradicating Tuberculosis | Mr. Thomas Wilson. |
| 10.00 a. m. | The National Live Stock Exchange and Its Interest in Eradicating Tuberculosis | Mr. Everett C. Brown. |
| 10.30 a. m. | The County Agent's Place in the Tuberculosis Eradication Campaign | Mr. H. E. McCartney. |
| 11 00 a. m. | The Editor and the Breeder | Mr. A. J. Glover. |
| 11.30 a. m. | The Advantages of an Accredited Herd | Mr. L. A. Campbell. |
| 1.00 p. m. | The Eradication Campaign in Missouri | Dr. D. F. Luckey. |
| 1.30 p. m. | The Combination Tuberculin Test Method | Dr. L. B. Ernest. |
| 2.00 p. m. | Report of U. S. L. S. S. A. Committee on Tuberculosis | Dr. T. E. Munce. |
| 2 30 p. m. | The Practicing Veterinarian in Accredited Herd Work | Dr. J. G. Townsend. |
| 3.00 p. m. | The Eradication of Tuberculosis from Areas | Dr. T. S. Rich. |
| 3.30 p. m. | The Eradication of Tuberculosis in Minnesota | Dr. C. E. Cotton. |
| 4.00 p. m. | Report of Committee on Tuberculosis Free Areas | Dr. M. Jacob. |

Discussion.

## COMMUNICATIONS

### "WATCH OUT FOR DR. J. HANAGAN"

To the Editor:

Letters on file in this office carry the information that one "Dr. J. Hanagan" was "located" in Harlowton, Montana, during the month of August, 1921, that he pretended to have "just returned from the U. S. Army," was a graduate veterinarian, and expected to follow the practice of the profession at Harlowton.

Through the pretenses above mentioned, Hanagan secured the instruments of the late Dr. A. H. Mehn, from his widow, giving a note without security. Hanagan also borrowed some money from a druggist in Harlowton "to make the trip to Helena to get his veterinary license."

Hanagan took the veterinary instruments he secured from Mrs. Mehn and has failed to return to Harlowton, and has never made application for a veterinary license.

I solicit your cooperation and request that you report any information you may have of "Dr. J. Hanagan" to this office, and also to Dr. W. J. Butler, Helena, and Mr. H. C. Hawley, Harlowton.

A. D. Knowles,
*Secretary, Montana Board of Veterinary Medical Examiners.*

### POST-CARD ADVERTISING BY VETERINARY SUPPLY HOUSES

To the Editor:

I wish to bring to your attention the habit which seemingly is growing with the supply houses of sending out post cards advertising their products, prices, etc., to the public eye as well as to the veterinarian addressed.

Today I have just received such a card. No doubt many of my brother practitioners have received similar cards. Veterinarians, let's get together on this thing and stop it while still a young practice. It is easy to do. When any firm sends you a post card, simply return it to them with a letter notifying them you will stop using their products if they can not send your mail more privately. And we shall soon see if that firm is willing to sell only to the graduate or if such firm wants to

sell to the public, and is so aiming to double-cross us with the post-card scheme of broadcasting the prices of their products. Stand by the firms that stand by you. If the majority of us will not tolerate such a cheap way of doing business as to send mail regarding prices of products, etc., on post cards, we can soon put a stop to it, and so uphold our professional interests. Brother practitioners, it's your turn now—Act.

Greensboro, N. C. G. S. GLOVER.

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## LETTER FROM ECUADOR

TO THE EDITOR:

As you doubtless know, in countries like these stock is very seldom treated, or if so in a very routine manner. This is due to ignorance, the manner in which stock raising is carried on, and the low value of most of the animals. I may say that this is especially true of Ecuador. Of all the South American countries this is, in my opinion, the most backward in stock raising, and added to that the people really refuse to learn anything new. I am the only graduate veterinarian in the country, and if I had to depend on practice I guess I would starve to death. I do a little private practice on race horses and dogs when I am not engaged on the haciendas. As yet we have not our Animal Industry Department in shape, and I do not know if we ever will have any animals or laboratory which are very much needed. However, we are going ahead slowly, and if allowed to continue I yet have hopes of making a success of it. But everything here advances very slowly.

It may be of interest to you to know, if you do not know already, that we now have foot-and-mouth disease in Ecuador for the first time. This was introduced May 2 by some Shorthorn bulls imported from Chile. These cattle arrived sick, but since there is no veterinary examination or quarantine, the port medical officer passed them. They were shipped directly to the Sierra near Quito, where the owner called in the municipal veterinarian, who diagnosed the disease as acute rheumatism and not contagious. Very soon over a thousand head were sick, and it spread to other haciendas, so that when the President finally called on me to investigate this disease there were some 20 haciendas and about 5,000 head or over sick I diagnosed it as foot-and-mouth, and tried to show the authorities how to com-

bat it by quarantines, but with poor success, for as soon as I had diagnosed it everyone became a veterinarian and my services were no longer needed. As a result it has spread over a good part of the country and has gotten down here on the Coast. There are still many haciendas infected, and it is continuing to spread. There are no animal sanitary laws, inspectors, or help of any kind. The most of the haciendados will not cooperate or take the disease seriously on account of the low mortality, and decreased production means nothing to the most of them. The Government has no money and will give no help, so I do not see how we can make much progress in eradicating the disease under the existing conditions. It is, however, in a very mild form, and the mortality is next to nothing, even in the calves. But on some ranches the loss in milk production, after recovery of the cows, is 20 per cent. Here on the coast where all the cattle are "criollo" the disease is even more benign than in the Sierra where there are a lot of grade Holsteins and some Shorthorns.

Other diseases that cause losses among calves are traumatic gastritis caused by hair balls, broncho-pneumonia, and pyosepticemia of sucklings. This latter disease I believe is responsible for many of the deaths among calves, although in many cases the symptoms are very vague. But the umbilicus of most of the calves born becomes infected. In fact, it is the custom to allow this to become infested with screw worms for eight days, after which it is cleaned out, the worms killed with creolin and then the wound packed with dry manure. In only a very few cases have I seen the articular form, but in many postmortems on calves which had been consistently "bad doers," I have found large abscesses in the liver, others in the lungs, and many times a bronchial pneumonia, and I believe the infection enters through the navel cord. In regard to vaccines, the only ones used here are for blackleg. The use of other biologics is not known here or is not permissible because of their cost. There should be a big demand for hog-cholera serum, as every year probably 60 to 70 per cent of the hogs die of cholera, and it is impossible to raise hogs on any scale. Yet I have not persuaded anybody to vaccinate, although the price of pigs is relatively high, so that it would pay if the serum could be imported, and I suppose it could be if kept on ice during the trip.

In addition to my position with this cattle company, I have

been appointed Inspector General, Sanidad Veterinaria del Litoral, by the Government, but I am sorry to say I don't believe we can accomplish much at the present time in control of diseases, because of lack of cooperation, but we have a start anyway, if only a very weak one. EUGENE FERRON.

Guayaquil, Ecuador.

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## MOVE TO ASSIST HORSE BREEDING

A movement is on foot to encourage horse racing in every State in the Union in order to insure the United States of improved breeds of Thoroughbred horses and thus open to this country a horse market which will successfully compete with England and Ireland, which for 200 years have been the horse markets of the world.

Thomas Clyde, Maryland horse breeder and patron of horses, agrees with the Horse Association of America, in its stand for the breeding of fine Thoroughbred horses in this country.

"The United States is immeasurably behind European countries in the matter of horse breeding," Mr. Clyde stated recently. "In Germany and in Austria-Hungary it was found necessary many years ago to assist private breeders by various methods to which the state contributed. In Russia in 1772, government studs and horse races were established with a view to improving the breed.

"France before the war had an interesting system of government horse breeding. Two or three times a year a commission appointed by the ministry of agriculture invited owners to bring their best horses to the various depots for inspection. Good racing records being essential, inspectors, with all particulars and performances on hand, made selections for size, soundness and looks. The offers were then made to the owners of the selected horses which could be accepted or refused. Such horses when bought were sent to one of the government depots for breeding purposes. English racing is the backbone of English horse breeding. The armies of central Europe were horsed by England. One of the most valuable pieces of property an Englishman can own is a popular and successful Thoroughbred stallion."—*Chicago Tribune.*

## NECROLOGY

Hon. W. C. Edwards, Senator in the Canadian Parliament and former member of the International Commission on Tuberculosis of the A. V. M. A., died September 17, in his seventy-eighth year. At the meeting of our association at Ottawa in 1903 Senator Edwards entertained those present for an entire day by taking them to his estate at Rockland on his steamer *Empress*. He provided a band, a luncheon and supper as well as a horse show of his Hackneys in his private pavillion. The ladies were given tallyho rides about the country in the morning and when the music started in the afternoon he began the ceremonies by dancing the Highland Fling himself. One session of this memorable meeting was held on his farm for the discussion of tuberculosis, as his individual herd of valuable Shorthorns was under the Bang system. Six years later the International Tuberculosis Commission met at Ottawa and after the business sessions were concluded the Senator again entertained the members at his home in Rockland in true Canadian fashion.

The passing of Senator Edwards removes not only one of the outstanding personalities in Canada, but a staunch and ardent friend of the veterinary profession.

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## SALMON MEMORIAL FUND GETS BEQUEST

The will of Dr. W. Horace Hoskins, dean of the New York State Veterinary College, of New York University, bequeaths $100 to the veterinary school "as a suggestive testimonial of my indebtedness to the veterinary school that afforded me a life work of usefulness and service and that brought me richer results and pleasures than money."

A similar sum is bequeathed the Salmon Memorial Fund "as a tribute to one of the most complete lives of unselfishness and true public service ever lived by any member of my chosen profession."

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*The Country Gentleman* contains a feature article entitled "Pedigrees and Pork," showing that purebred stock pays at the trough. It concludes with the statement "the purebred hog makes pork most economical and this is the big factor breeders must teach and prove and sell."

## MISCELLANEOUS

### HONOR FAMOUS MORGAN HORSE

Justin Morgan, progenitor of the famous breed of Morgan horses, which made farm animal history during the last century, was honored on the centenary of his death, October 1, as very few horses ever have been honored. A statue of a representative Morgan horse was presented to the United States Department of Agriculture at the department's Morgan horse farm, Middlebury, Vt., by the Morgan Horse Club.

The statue, which cost $18,000, is by Frederick G. R. Roth, of Englewood, N. J., one of the foremost animal sculptors of the world. It is of bronze, one-fourth oversize, and stands on a pedestal of Vermont granite in front of the barn of the breeding farm, near the top of a beautiful sloping lawn, about 250 yards from the highway and 50 yards from the circular driveway of the grounds.

To get the type correctly, Mr. Roth studied all the literature of the breed, examined old prints, inspected modern representatives of the type, and interviewed dozens of American Morgan horse breeders. It is expected that the statue will stand as a permanent standard of the breed.

The presentation speech was made by E. A. Darling, of East Burke, Vt., president of the Morgan Horse Club, and the statue was accepted by Dr. John R. Mohler, Chief of the Bureau of Animal Industry. It was unveiled by Miss Elizabeth G. Stillman, daughter of C. C. Stillman, of New York, secretary of the club.

Justin Morgan, founder of the famous family, was the property of a Vermont breeder by that name, and was foaled in 1789. He was by True Briton, by Imported Traveler by Morton's Traveler, which traces in near and direct lines to Arab stock. From the line descended a number of famous trotters of the last century, but the popularity of the family was based chiefly on the endurance, beauty, and style of its members.

In recent years the race became scattered and nearly extinct, but has been largely restored to its original form through the efforts of the Department of Agriculture.

In accepting the statue, Dr. Mohler said:

"Members of the Morgan Horse Club and friends:

"Few horses have been honored as the horse which stands on this pedestal has been honored. Nor is it a transient impulse that has led to this beautiful tribute. Within the span of a hundred years many things are forgotten. Human life and human memory are necessarily crowded with events that demand thought and attention. Yet here in bronze is a creature whose service to mankind has won for him human esteem that has continued through a century. It was an esteem so sincere that intervening generations have accepted it, nourished it, and passed it on to us as an inheritance.

Bronze Statue of Justin Morgan

"In this statue of Justin Morgan, progenitor of the breed that bears his name, we have the expression of a glowing zeal, a desire to go on, to build, and to beautify. The sculptor's art has given us a Justin Morgan of enduring bronze. But there is also another Justin Morgan, a horse of flesh and bone and blood. In a material sense, and from a lay standpoint, that

horse died a century ago. But as horse lovers and breeders of living creatures you know that the great sire whom we honor today still lives wherever Morgan horses are bred.

"Definite purpose, vision, cooperation, and skill—these attributes combined in a permanent organization like the Morgan Horse Club virtually guarantee the immortality of its notable sires and dams as expressed through their progeny.

"Within the century that has just passed our national development has been unusually rapid in engineering, mechanics, and related sciences. This has been true chiefly beause engineering has been the life study and life work of thousands and thousands of prsons. Opportunities were plentiful, the field was large, and the results attained were inevitable. Our private and public works, inventions, and industrial prominence in world affairs are ample evidence.

"Yet, judged in the light of true public service, which is the final test of an achievement, the work of developing a fine type of live stock is fully as noteworthy as that of completing a fine piece of engineering.

"Human aims and preferences, of course, are diverse, for which let us be thankful. It means more fruits of life to enjoy, even though we have not personally grown them. Besides, it leaves a wider range for initiative in whatever field anyone selects for his own work. But what satisfaction can any man or woman enjoy that surpasses the development and perfection of useful living creatures, embodying beauty, grace, and strength?

"The work of a breeder has a scope which overflows the limits of ordinary professions. Members of the Morgan Horse Club are at once engineers in combining weight, speed, and balance; sculptors in molding future form, conformation, and style; historians in the study of traditions and records; and finally, philanthropists in presenting the statue of Justin Morgan, which many may study and enjoy. In behalf of the United States Department of Agriculture, I receive this beautiful tribute and gift. Though you have presented it to the department, I am confident that you desire the public to share in the benefits which it is capable of giving. The department, therefore, will be its custodian, faithful to the trust which you have shown. But just as Morgan blood has permeated the horse stock of the country, so let us be liberal in extending the educational influence

of this horse of bronze. It is here for visitors to see, to study, and to enjoy. It is here also for the artist to paint and the camera to reproduce for the benefit of those who cannot come to this spot. Members of the Morgan Horse Club, I accept your generous gift and confidently hope that the Justin Morgan of bronze may ably supplement the achievements of the other Justin Morgan who lived a century ago."

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Dr. B. F. Kaupp, Professor of Poultry Diseases at the North Carolina Agricultural College, has just returned from the World's Poultry Congress, held at The Hague. There were 450 delegates present from 25 countries, and all present pronounced the congress a grand success.

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The Ohio State Veterinary Medical Association will hold its next annual meeting in the Hotel Deschler, Columbus, Ohio, on February 2 and 3, 1922. An attendance of 350 is anticipated, the February dates having been selected to avoid conflict with the many meetings held in January by the different State associations.

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An outbreak of blackleg is reported by Dr. W. C. Sprinkly on a farm near Oakland City, Gibson County, Ind.—*Indiana Farmer's Guide.*

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For the first time in several years it is reported that cattle again are being poisoned by larkspur in Oregon.—*Portland Oregonian.*

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Dr. C. P. Dixon of Charlottesville, Virginia, is spending his well-earned vacation of a few months in England.

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Dr. A. H. Logan has been transferred from Federal hog cholera work in Kentucky to the same project in Florida.

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Dr. G. J. Lingerich has gone from hog cholera work of the Bureau of Animal Industry in Iowa to meat inspection duties at Chicago, Ill.

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Dr. A. C. Drach has severed his connection with the Bureau of Animal Industry and is now engaged in the production and sale of anti-hog-cholera serum.

Dr. E. I. Smith has been placed in charge of the Government work of tuberculosis eradication and hog cholera control in Tennessee with headquarters at Nashville.

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Dr. Lynn H. Tripp and Dr. Dennis S. Shannon have been transferred from Federal meat inspection at Boston to tuberculosis eradication in Vermont.

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Dr. James B. Way, who has been engaged in field inspection duties on the force of the Bureau of Animal Industry at Fort Worth, Texas, has been transferred to tuberculosis eradication in Kentucky.

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A flivver must be mighty disgusting to a horsefly.—*Detroit Journal.*

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The second session of the International Research Council will be held at Brussels, Belgium, beginning July 22, 1922, according to an announcement by the Secretary General, A. Schuster.

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Two veterinarians are included in the commission to be entrusted with the task of elaborating the new Spanish Pharmacopœia. It is composed, in addition, of four physicians and four pharmacists. All are members of the Academy.

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An extended review of horse-raising in the United States and Canada, by Prof. H. Zwaenenpoel, of the Belgian Veterinary School, appeared in the *Annales de Médecine Vétérinaire* for April, 1921. Among other observations he remarks that the feet of horses are not well cared for in America. He considers horseshoeing very backward here. Because of the insufficient number of horseshoers and the great distances, he says, farmers sometimes shoe their own horses and use improper shoes. He observed that a great many horses go unshod and that the trimming of their hoofs is neglected, with the result that the hoof spreads and splinters, causing injury to the heels. He also found much to commend in American horses.